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# Applying Rapid Decisive Operations: Possibilities for 2010

Karl H. Lowe

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# INSTITUTE FOR DEFENSE ANALYSES

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JAWP

*Ted Gold, Director*
*Joint Advanced Warfighting Program*

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Notions of new joint force capabilities enabling new ways to fight have been emerging over the past several years. Recent U.S. military operations have applied aspects of these notions, hinted at in the Kosovo campaign, displayed more discernibly in the current campaign in Afghanistan. The enabling capabilities include robust connectivity among the elements of the joint (and combined) force; an extensive network of intelligence, surveillance, and reconnaissance (ISR) assets responsive to commanders; plentiful precision strikes (kinetic and other) from a distance; agile and rapidly deployable ground forces; and an adaptive joint command and control system to orchestrate all the above.

In this paper, Karl Lowe describes a new way to fight enabled by these capabilities. The concept lies within the framework of US Joint Forces Command's exploration of Rapid Decisive Operations, which is intended to deal with distant contingencies and resourceful adversaries before facts on the ground become too hard to change. The time setting for the concept in this paper is beyond 2010—far enough out to allow time for experimentation, close enough to feel tangible. To highlight what is different about this new way to fight, the description of this concept for the future is in the form of end-to-end campaigns applied to contingencies of the recent past, including Panama (1989), Persian Gulf (1991), and Kosovo (1999).

The paper focuses on three critical joint enablers of new ways to fight: joint command and control; ISR integration; and joint force employment. All need to be "born joint" to some extent in order to gain the synergy from integrating what the Services bring individually.

The purpose of the paper is to stimulate new thinking and debate about transformation choices we face, and it offers an operational context around which transformation efforts can coalesce. I invite your comments and feedback to the author:

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Ted Gold

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*Experimentation in the Period Between the Two World Wars: Lessons for the Twenty-First Century*, Williamson Murray, IDA Document D-2502, October 2000.

*Lessons Learned from the First Joint Experiment (J9901)*, Larry D. Budge and John Fricas, IDA Document D-2496, October 2000.

*The Joint Experiment J9901: Attack Operations Against Critical Mobile Targets*, Joint Advanced Warfighting Program, September 29, 2000. Prepared for the US Joint Forces Command.

*Joint Warfighting Experimentation: Ingredients for Success*, James H. Kurtz, IDA Document D-2437, September 2000.

*Framework for Joint Experimentation—Transformation's Enabler*, Karl Lowe, IDA Document D-2280, January 1999.

## Joint Concept Development

*Applying Rapid Decisive Operations: Possibilities for 2010*, Karl H. Lowe, IDA Paper P-3602, December 2001.

*Future Joint Force Headquarters*, Scott Schisser, IDA Paper P-3601, forthcoming, December 2001.

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*A Historical Perspective on Effects-Based Operations*, Williamson Murray, with Thomas O'Leary, Joel Resnick, Dennis Gleeson, and Gwen Linde, IDA Paper P-3606, forthcoming, 2001.

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*Military Operations in Urban Terrain: A Survey of Journal Articles*, D. Robert Worley, Alec Wahlman, and Dennis Gleeson, Jr., IDA Document D-2521, October 2000.

## Transformation Process

*Red Teaming: Shaping the Transformation Process. Annotated Briefing*, John Sandoz, IDA Document D-2590, June 2001.

*Thinking About Innovation*, Williamson Murray, IDA Paper P-3576, June 2001.

*Red Teaming: A Means for Transformation*, John F. Sandoz, IDA Paper P-3580, January 2001.

*Developing Metrics for DoD's Transformation*, Joel B. Resnick, IDA Document D-2528, October 2000.

## Seminars and Workshop

*Workshop on Advanced Technologies for Urban Operations, November 14-15, 2000: Summary of Proceedings*, William J. Hurley, IDA Document D-2574, June 2001. For Official Use Only.

*Joint Advanced Warfare Seminar*, James H. Kurtz, Daniel E. Moore, and Joel B. Resnick, IDA Document D-2346, July 1999.

*Workshop on Advanced Technologies and Future Joint Warfighting, April 8–10, 1999: Summary of Proceedings*, William J. Hurley, Phillip Gould, and Nancy P. Licato, IDA Document D--2343, May 1999.

## General

*FY2001 End of Year Report*, Theodore S. Gold et al., multi-volume set, forthcoming, December 2001.

*FY2000 End of Year Report: Volumes I, II, and III*, Theodore S. Gold et al., IDA Paper P-3571, November 2000.

# Preface

This paper was prepared under the task order Joint Advanced Warfighting Program (JAWP). The primary sponsor was the Assistant Secretary of Defense for Strategy and Threat Reduction. It addresses the task order objective of generating advanced joint operational concepts and joint experimentation to assist the Department of Defense in transforming U.S. military capabilities.

The JAWP was established at the Institute for Defense Analyses (IDA) by the Office of the Secretary of Defense and the Joint Staff to serve as a catalyst for stimulating innovation and breakthrough change. The JAWP Team is composed of military personnel on joint assignments from each Service as well as civilian analysts from IDA. The JAWP is located principally in Alexandria, Virginia, and includes an office in Norfolk, Virginia, that facilitates coordination with the United States Joint Forces Command.

This paper does not necessarily reflect the views of IDA or the sponsors of the JAWP. Our intent is to stimulate ideas, discussion, and, ultimately, the discovery and innovation that must fuel successful transformation.

# Contents

# Illustrations

# Executive Summary

The purpose of this paper is to stimulate new thinking about the way future forces will fight. Its central idea, concentrated synergistic attack, is about responding effectively to contingencies before facts on the ground get harder and costlier to change. While a contingency response has multiple dimensions, and speed may not be appropriate in all cases, having the ability to respond quickly widens the range of available options.

The paper is a circa-2010 expression of US Joint Forces Command's integrating operational concept, Rapid Decisive Operations (RDO). By looking out to 2010 and beyond, this paper allows the exploration of capabilities that do not yet exist. RDO 2010 offers a horizon that is near enough to be recognizable to today's planners but is far enough into the future to provide enough time for experimentation and implementation.

RDO 2010 emphasizes *shock*, *tempo*, and *synergy* to seize and hold the initiative. Emphasis on *shock* stuns an enemy with the recognition that he is no longer in control and things can only get worse for him. Emphasis on *tempo* minimizes an enemy's time to adapt, and emphasis on *synergy* seeks maximum disruptive effect with every attack.

RDO 2010's most important enablers are joint command and control; networked intelligence, surveillance, and reconnaissance (ISR); and synergistic joint force employment. It devotes particular attention to employing ground forces in conjunction with land and sea-based air operations near the onset of a conflict. While history demonstrates the value of aerial or cruise missile attacks for limiting friendly casualties, it also demonstrates the limitations inherent in employing only one

form of military power or segmenting aerial and land campaigns. RDO 2010 therefore explores ways to bring all forms of military power to bear synergistically. Among its benefits are:

- ▶ complicating an enemy's response options,

- ▶ sharply limiting his time to adapt,

- ▶ providing greater operational flexibility, and

- ▶ facilitating a rapid, decisive outcome.

RDO 2010 posits new roles for ground forces by exploiting the combination of aerial mobility and light ground transportation and robotics, and employing them in close concert with air and missile bombardment and non-kinetic forms of attack.

To illustrate the potential power of the RDO 2010 concept, this paper revisits the Gulf War, the intervention in Kosovo, the invasion of Panama, and U.S. operations in Somalia. These retrospectives reflect on what happened and project *what might have been*. In other words, what might have happened if RDO 2010 capabilities and doctrine had been in place a decade ago.

From these four contingencies, the author draws implications for the planning and conduct of future operations. Each is briefly discussed in the following paragraphs.

**Focus early on breaking enemy cohesion.** Overcoming an enemy's central defenses and striking his vitals with an all-arms force from the onset of conflict could have made a significant difference in the outcome of each of the past decade's conflicts. Common to all

such contingencies to date is the importance of focusing on an enemy's cohesion and critical capabilities *from the outset.* Operations in Panama set that standard, challenging future planners to find a way to achieve similarly swift and decisive success without already being there at the onset of crisis.

RDO 2010 seeks decisive effect through the disruption or destruction of enemy leadership. It is usually leaders—whether motivated by power, greed, ideology, or nationalism—who precipitate a crisis. Leaders orchestrate strategy, issue directives for military action, and synchronize military and civil activity. If mass casualty weapons are involved, their employment will most likely be decided at the top of the leadership chain.

**Employ standing joint task force (JTF) headquarters.** Also common among the retrospective scenarios is the importance of joint command and control structures capable of orchestrating joint operations against an enemy's vitals *from the onset of operations.* Creating standing JTF command and staff teams in each of the geographic unified commands and training them together in multi-echelon command and staff exercises should make such operations possible.

**Integrate intelligence, surveillance, and reconnaissance efforts.** "Low density/high demand" is a term routinely and appropriately applied to sensor platforms of all types, but more is missing than just systems. Sensors and intelligence assets are "stovepiped" by ownership and function, making it difficult to correlate their output.

As information sources become more diverse, and commanders exploit reach-back to distributed information centers worldwide, the problem of stovepiping will grow in scope and complexity. If information is to be an enabler of future operations, then timely cor-

relation of information from diverse sources and its prompt dissemination to users will be critical.

## The advantage of hindsight

Interpretation of history's lessons is best approached with caution and humility—even its most accomplished students often disagree on the meaning of past events. The author's intent is to illuminate salient issues for experimentation that could yield breakthrough change in the way future forces and capabilities are employed.

This paper's use of history reflects only one of a range of possible interpretations; alternative views are welcomed.

# Applying Rapid Decisive Operations: Possibilities Beyond 2010

# 1 Introduction

A succession of post-Cold War reviews and studies of U.S. security aims and capabilities have issued calls for change. Most notable are reports of the Commission on Roles and Missions, the National Defense Panel, the Defense Science Board, and the Commission on National Security in the twenty-first century. *Joint Vision 2020* reinforces those calls by making *full spectrum dominance—persuasive in peace, decisive in war, preeminent in any form of conflict*—its overarching objective. It defines transformation's broad goals, with Service vision documents echoing its objectives. All express the *why* of transformation in similar terms, but the *how* and *what* remain contentious, with a unifying vision still unsettled.

This paper offers an operational concept around which new thinking and experimentation on the full range of doctrine, organization, training, materiel, leadership, people, facilities, and policy can coalesce. It does not assume one operational concept can fulfill all needs, but recognizes the unifying influence of an overarching concept. The paper aims to stimulate the search for answers by illuminating salient issues for experimentation. Consistent with its aim of stimulating breakthrough change for future joint operations, the rapid decisive operations (RDO) concept discussed in this paper is a circa-2010 companion to US Joint Forces Command's RDO and is referred to in shorthand throughout this paper as *RDO 2010*.

In the past, transformations have stemmed from concerns about how to solve a particular operational problem. For example, during the interwar years (1919–1939), carrier warfare was devised mainly to outrange the fires of battleships and extend influence over greater distances. Today's counterpart problem is responding to distant contingencies before facts on the ground get harder and costlier to change. Whatever America's reasons are for committing forces (to provide humanitarian relief; to stop mass killing, ethnic expulsions, or cross-border aggression; punish terrorism; or prevent an enemy's use of mass casualty weapons), *response speed* is a common critical challenge. While contingency response has multiple dimensions and speed may not be the right answer in all cases, having the ability to respond quickly widens the range of options available to the nation's leadership.

Beyond getting to a contingency area fast, it is important to quickly seize the initiative and maintain an operational tempo that exceeds the enemy's ability to adapt. To that end, RDO 2010 explores the concerted application of air, land, sea, and space capabili-

ties to create and exploit *synergy*, thus generating greater impact from concerted effort than any single force element could achieve on its own. This synergy is where unity of effort has historically been most difficult to achieve but where payoffs are potentially the greatest. Fostering and enabling synergy's exploitation requires special attention to a "joint glue," that is, joint command and control, intelligence, surveillance, and reconnaissance (ISR) integration, and joint force employment. These are keys to bolder change.

Focusing on exploiting synergy through the concerted employment of flexible combinations of forces, RDO 2010 neither addresses nor rules out air-only operations, a capability whose advantages and limitations (learned in action over Syria, Libya, Iraq, and Yugoslavia) are documented elsewhere.[1] Consistent with the emphasis of maritime Services on littoral operations, operations at sea are addressed only in relation to operations ashore. Non-combat operations are addressed only in terms of their pre- and post-conflict roles.

## Organization of This Paper

Chapter 1 sets the context for transformation and RDO. In Chapter 2, some salient issues from past wars—Gulf, Kosovo, Panama, and Somalia—are highlighted. This historical perspective lays the groundwork for Chapter 3, where the lessons of previous attempts at transformation are drawn from U.S. and coalition experiences in contemporary wars. This leads into Chapter 4 in which history is rewritten by applying the RDO 2010 concept to four contingencies—Gulf War, Kosovo, Panama, and Somalia—and illustrating the potential of RDO 2010.

The appendices contain possible solutions to certain problems if transformation efforts are focused on the three enablers of RDO: (1) joint command and control; (2) intelligence, surveillance, and reconnaissance (ISR) integration; and (3) joint force employment. Appendix A describes how a joint command structure could look and work, with Appendix B describing how ISR could be more effectively integrated. Appendix C discusses how joint operations could be supported and sustained on enemy territory, and how air-ground operations could mitigate the risks posed by enemy air defenses. All of these materials should help stimulate and shape joint experimentation.

Finally, references and a list of acronyms and abbreviations are provided.

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[1]  A prominent example is Williamson Murray and Wayne Thompson, *Operations, Report 1, Volume II, Gulf War Air Power Survey,* edited by Eliot Cohen (Washington, DC, US Government Printing Office), 1993.

# 2  Historical Perspective

It is often argued that military establishments resist bold change because they habitually focus on improving their ability to re-fight their most recent war. That assertion is only partly true. Military organizations tend to be cautious regarding change because bold change can be disruptive and its impact uncertain. History (that is, experience), however, is the frame of reference from which institutions, like the humans who populate them, learn and adapt. Exploring *what happened*, identifying *why it happened*, and projecting *what might have been* can therefore be a powerful tool for focusing transformation efforts on the most important issues.

Historically, military establishments achieved bold leaps in capability when they have reacted to lessons learned from past conflicts with ideas that loosened the grip of their dominant institutions. For example, several battleship-dominated navies, stimulated by lessons from the Russo-Japanese War and Jutland, adopted carrier warfare in the inter-war years as a way to out reach battleships and deal with the complexities posed by vast distances and airbase-studded oceans. During the same era, Germany's infantry and artillery-dominated Army drew lessons from trench warfare that prompted its adoption of air-ground combined arms operations to inflict and exploit shock and deprive enemies of time to react and adapt.

Interpretation of history's lessons is best approached with caution and humility—even its most accomplished students often disagree on the meaning of past events. This paper's use of history reflects only one of a range of possible interpretations; alternative views are welcomed. Exploiting the advantage of hindsight, this paper illuminates salient issues for experimentation that could yield breakthrough change in the way future forces and capabilities are employed. To this end, the paper explores recent conflicts and examines what might have been possible if solutions to selected problems had focused on three enablers of RDO: joint command and control, ISR integration, and joint force employment.

The retrospective applications of RDO 2010 to DESERT STORM (Iraq), ALLIED FORCE (Kosovo), and JUST CAUSE (Panama) offer insights that, if addressed through experimentation, could yield breakthrough capabilities.

OPERATION DESERT STORM was a dramatic success in the eyes of the public, but as in all conflicts, some things did not work as intended and others not at all. A number of problems remain unresolved and continue to be of major importance if the United States participates in future contingencies. Examples include a lack of success in finding

and destroying Iraqi Scud missiles; the inability of six weeks of bombing to destroy the Republican Guard; and the survival of Iraqi weapons of mass destruction (WMD), which were thought to have been destroyed when facilities housing them were bombed. While multiple factors may have contributed to these failures, some common problems can be identified:

▶ **Separation of air and ground efforts** made it difficult to flush critical targets out of hiding, to confirm what gun cameras and overhead imagery could not, and to capture sources of information that exposed targets and target linkages that could not be uncovered by peacetime intelligence efforts or bombing.

▶ **Rigid command and control structures** limited the ability of the staffs to overcome the tight timelines imposed by fleeting targets.

▶ **Stovepiped ISR "ownership"** made it difficult to correlate outputs and provide a more synoptic and timely picture of the enemy's exploitable weaknesses.

**OPERATION ALLIED FORCE** against the Serb-dominated remnant of Yugoslavia reinforced some of the lessons learned from the Gulf War and added new ones. Although aerial bombing probably played the dominant role in compelling Serb forces' withdrawal from Kosovo, it could not prevent the civilian population's victimization, which was the campaign's stated objective. The bombing campaign also caused long-term, costly damage to civilian infrastructure important to the region's economic recovery. Some issues of continuing concern include:

▶ As in the Gulf War, **adaptive command and control** was absent. This was needed to respond to the narrow time windows offered by fleeting targets.

▶ **Air operations suffered from an inability to find enemy air defenses**. Consequently, manned aircraft had to fly above 10,000 feet to stay beyond the range of enemy air defense missiles that were kept passive to maintain a threat in being. This, in turn, resulted in significant degradation of the effectiveness of expensive precision weapons and platforms.

▶ **Networking automated correlation of sensor output** needed for expensive suites of new sensors and sensor platforms to achieve their potential was absent. Stovepiped sensor "ownership" negated important benefits of

advanced technology.[2] Planners also lacked the joint doctrine, organization, and training needed to recognize and exploit potential synergies among the various sensors and platforms available.

▶ **Training as flexible joint strike packages** was absent. This was needed to defeat forces concealed and embedded among a hostage civilian populace As in the Gulf War, synergy remained elusive: with rare exceptions, air and ground forces trained independently before the war and were employed as they trained—separately. Serb troops, police, and irregulars who were causing the mayhem could not be flushed out of shielded positions by air power, allowing their actions to continue throughout the 78-day air campaign.

▶ **Allied capabilities lagged significantly behind those of the United States,** limiting the effectiveness of U.S. forces as well. The problem was not just incompatible security procedures or less capable systems, it was—more importantly—*a gap in force application doctrine.* Participating countries had not developed and practiced a common approach to offensive operations and consequently had not prepared political decision-makers for doing something new.

OPERATION JUST CAUSE in Panama offers lessons of another kind. Its explicit objective was to remove the opposing leader from power—and that outcome endures.

▶ Despite Manuel Noriega's elusiveness, **synchronized operations against his political and military command apparatus compelled him to seek sanctuary**, removing him from access to levers of power. This leader-focused approach to warfare may become increasingly important in future contingencies, particularly if the opposing leader is orchestrating the victimization of civilians or controls mass casualty weapons.

▶ **There was a direct relationship established between intended effects and applied means**. Aerial and artillery fires were used sparingly to minimize collateral damage, but when used, the timing of their application was closely synchronized with ground maneuver to optimize the effect of each. The precision with which aerial and artillery fires were employed heightened the effect.

The next chapter describes the characteristics of RDO 2010, and the implications for coalition warfare.

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[2] For example, Army counterfire radars could not network with the Air Force's targeting system. See *Kosovo Quick Look Report,* Joint Staff, 27 August 1999.

# 3 RDO 2010's Characteristics

This chapter briefly describes the characteristics of RDO 2010 and its principles of decision superiority, rapid response, initiative, strategic focus, concentration, and flexibility.

## 3.1 Characterizing the Concept

For purposes of deterrence and warfighting, RDO 2010 places a premium on *shocking* an enemy with the *tempo* and *synergy* of operations from the onset. This emphasis is driven by the time-distance realities of America's strategic situation:

▶ Military movements or preparations are sometimes restricted during an evolving crisis to avoid provocative or diplomatically awkward activity, potentially abbreviating the interval between the receipt of authorization to deploy and the onset of hostilities. Early deploying forces are then confronted with the possibility of immediate hostilities upon arriving in the contingency theater.

▶ Strategic mobility resources severely limit the size of a force that can be delivered in a single lift by air and sea. This compels giving the small force initially deployed substantially greater power and range of influence than its size would suggest.

▶ Future contingencies cannot depend on having the time or access to build up forces, and cannot depend on the enemy being deterred or restrained. This suggests using the small force initially deployed to attack things that can quickly disrupt the enemy's cohesion—most notably his senior civil and military command centers and internal security apparatus.

▶ To avoid ceding the initiative to the enemy, initial operations should sharply narrow an enemy's most damaging options and his prospects for success from the onset of hostilities. This brings a second target set into the picture—the enemy's mass casualty weapons delivery capabilities.

RDO 2010 therefore emphasizes quickly seizing the initiative by attacking what an enemy values most with more means and from more directions than his defenses can handle, even if he is fully alerted and well informed. The intended effect is a quick breakup of the enemy's cohesion, enabling follow-on forces to defeat him in detail if necessary. Our experience in post-Cold War conflicts suggests a fairly low-cost set of key ingredients for being able to conduct the kind of operations suggested in this paper. Examples include:

- ▶ Networking ISR assets, regardless of "ownership," to provide joint force commanders a synoptic picture of their area of operations.

- ▶ Creating a joint command and control structure that can (1) deploy as a fully effective entity on very short notice and (2) orchestrate the concerted application of mission-tailored packages of air, land, and sea forces, ISR, and fires provided by any or all Services.

- ▶ Creating robust "born joint" communications and information structures that enable commanders at all levels to share a common relevant operating picture and exploit reach-back to distributed centers of information world-wide.

- ▶ Adopting a bold center-of-gravity focused offensive doctrine and a joint training program focused on enabling forces to fight as coherent joint entities.

- ▶ Creating a leader development program that stimulates military and civilian leaders to think in terms of breaking an enemy's cohesion as the first consideration in nearly any form of future warfare.

RDO 2010's emphasis on *shock* seeks to cause an enemy to believe or recognize that the situation has gone so far out of his control that he cannot recover in time or at all—and that things can only get worse for him if he persists in activity that precipitated the crisis. RDO 2010's emphasis on *tempo* seeks to minimize an enemy's time to adapt. Its emphasis on *synergy* seeks to enable forces to deliver maximum disruptive effect with every attack.

The early application of RDO 2010 can be likened to a boxer's opening jabs while building knowledge and opportunity to deliver a knockout blow. An RDO 2010 operation would therefore reflect:

- ▶ **Decision superiority.** Networking manned units, aerial, and ground robotics, and combinations of sensors to make them more self-synchronizing and able to quickly expand knowledge of an enemy's most important nodes and activities.

- ▶ **Rapid response.** Acting before "facts on the ground" become politically and militarily harder and more costly to change. Because warning time may be short or limited by political considerations, forces would attack directly from peacetime operating locations and intermediate staging locations with air, land, sea, and space capabilities deployed and employed in concert. Such operations would be near simultaneous rather than sequential.

▶ **Initiative.** Attacking relentlessly from the onset of hostilities to gain and maintain the initiative. Concentrating effects in time and geography is intended to overwhelm an enemy locally and disrupt him generally to gain and maintain the initiative. While an enemy may have overall superiority in numbers in the theater, he would never be able to count on having local superiority at places U.S. and allied forces choose to strike.

▶ **Strategic focus.** Making an enemy's "vitals" the primary targets for concerted joint offensive action from the onset of hostilities. However strategic objectives are defined in a crisis, disrupting an enemy's cohesion is most likely to paralyze decision-making and cause his quick collapse. Striking what an enemy leader values most could also cause him to dissipate his best forces to protect core interests, possibly obliging them to move out of cover and causing them to become more vulnerable to destruction.

▶ **Concentration**. Concentrating overwhelming joint air, land, sea, and space power locally, achieving disruption, and moving rapidly to other objectives before an enemy has time to assess what happened or determine what might happen next.

▶ **Flexibility.** Applying joint forces at the strategic, operational, or tactical levels, or all of them at once, depending on the mission and political guidance. Recognizing that every contingency differs from every other in its military and political context, options should be sufficiently flexible to ensure early success.

## 3.2   Implications for Coalition Warfare

It is axiomatic that the United States will normally fight as a partner in a coalition of the willing, sharing the risks to make American leadership politically feasible. Because partners will vary from one contingency to the next, and each country has its own organizations, procedures, and systems, it is unrealistic to expect *technical* interoperability with all prospective partners.

More important are relationships established in training among forward deployed, allied, and overseas-based quick reaction forces. These provide the shared foundation for a coalition response capability. During the Cold War, NATO's AUTUMN FORGE exercises and a shared threat perception kept U.S. and allied forces working together, cultivating a common doctrinal outlook and finding creative ways to support each other and operate as team members even if their communications did not mesh. Because the United States is widely studied by others, having a bolder doctrine encourages others to study its application and examine their own capabilities for participating in U.S.-led operations.

Creating or exploiting exercises and simulations that enable U.S. and allied commanders to think through and work out challenges associated with time-sensitive coalition operations is becoming increasingly important. The United States cannot depend on having the luxury of time to build coalition strategies, plans, and interoperable capabilities *from scratch* in the heat of a crisis. Consequent capability gaps and lags in responsiveness would almost certainly cede the initiative to enemies. Unless the requisite military capability, particularly a bold force application doctrine, is developed and honed in partnership with selected core allies in peacetime, quick political decisions would be moot because allied officers would lack the options to present to their governments and would lack confidence in being able to execute unfamiliar American concepts.

# 4 Retrospective Applications of RDO 2010

History provides a context for understanding contemporary military operations. Exploring what might have been done differently in past contingencies should stimulate new thinking about RDO 2010's potential future application. This chapter therefore takes a retrospective look at how the RDO 2010 concept could have been applied in the Gulf War and Kosovo, and contrasts U.S. experience in Panama with operations in Somalia. These contingencies were chosen for several reasons:

- ▶ They are still fairly recent (post Cold War) and therefore familiar to readers.

- ▶ They also represent a spectrum of high-, mid-, and low-end contingencies in terms of their stakes and scope.

- ▶ And finally, they offer diverse geography representative of a range of areas in which future contingencies might arise.

## 4.1 Retrospective: The Gulf War

If U.S. and allied forces had adopted bolder joint doctrinal and organizational changes more than a decade ago, could they have performed better in recent contingencies? Lessons drawn from operations in Grenada (1983), the Dominican Republic (1965), Desert One[3] (1980), and Vietnam could have laid the foundations for further-reaching change before the Gulf War, but some important opportunities were missed.

This retrospective on the Gulf War seeks to draw on that experience, illuminating the possibilities for future operations. It also emphasizes the interplay of offensive air-land-sea operations. The retrospective also suggests that bolder changes in joint force employment and, in particular, joint command and control could have resulted in enabling a significantly smaller force to defeat Iraq earlier, less damage on Iraq's economic infrastructure, and a quicker curtailment of Iraq's use of theater ballistic missiles. Such considerations are likely to become especially important in future conflicts, no matter where they occur.

### 4.1.1 Looking Back

In 1990, Iraq's near isolation in the United Nations, six months of coalition force deployments, and six weeks of intensive bombing of Iraq's most important facilities and

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[3] The site in the Iranian desert in which the US military planned to launch a rescue attempt to rescue U.S. hostages from captivity in Tehran.

forces failed to persuade Saddam Hussein to withdraw his forces from Kuwait. He remained defiant of United Nation mandates and even launched an abortive spoiling attack into Saudi Arabia. While much of his Army was not eager to fight, the Republican Guard arrayed behind it was. (The poorly armed conscripts of the lone division "defending" Iraq's panhandle were scattered in small, isolated packets across tens of thousands of square miles of desert, with tenuous re-supply and no reinforcement possible for up to seven days.)

Could the war have ended sooner and differently if the opening air and missile attack against Iraq had been accompanied by a joint night air assault composed of Army, Marine, and Special Operations Forces (SOF)? Figure 1 below presents an overview of a rapid campaign scenario.
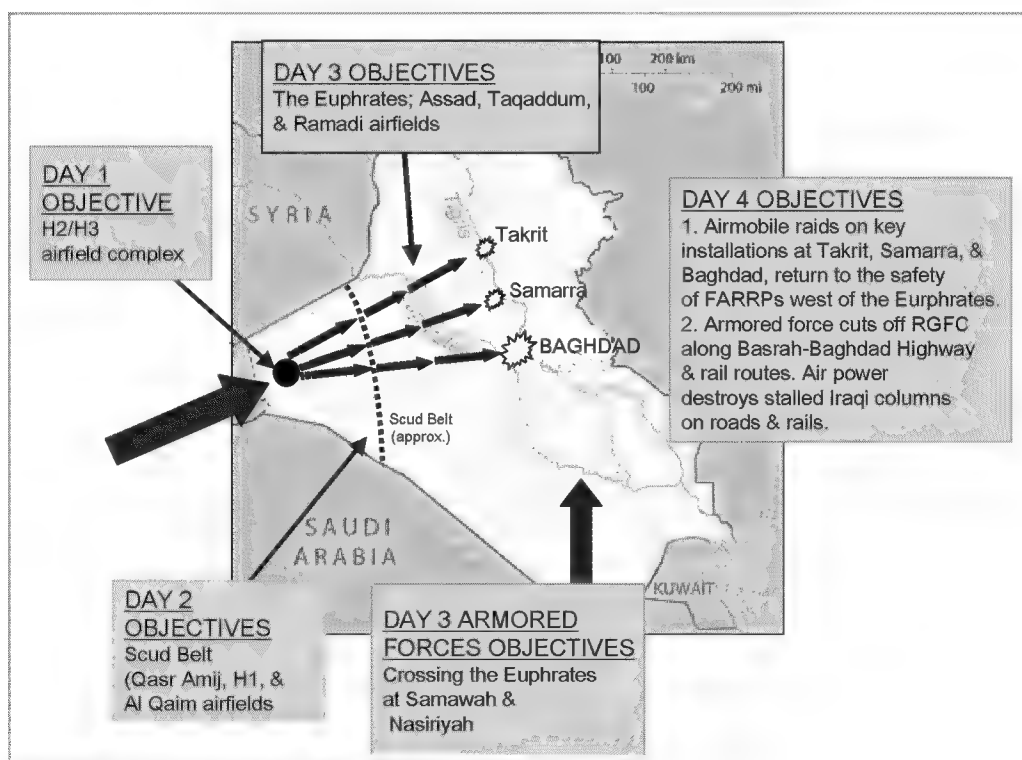


Figure 1. Desert Storm Retrospective (Overview)

Operating under a standing "born joint" joint task force (JTF), such an assault force could have entered from western Saudi Arabia and the Red Sea, seized an isolated complex of airfields in western Iraq, and quickly bounded to the Euphrates River. While allied aviation and sea-launched cruise missiles struck strategic targets throughout Iraq's heartland, heliborne ground forces striking from the west would have compounded Iraq's ability to respond effectively.

**Day One.** An airmobile force of six U.S. and allied infantry battalions is launched from Ar Ar and Al Turayif into the H3 airfield complex, capturing all three airfields in a pre-dawn assault (Figure 2 below).
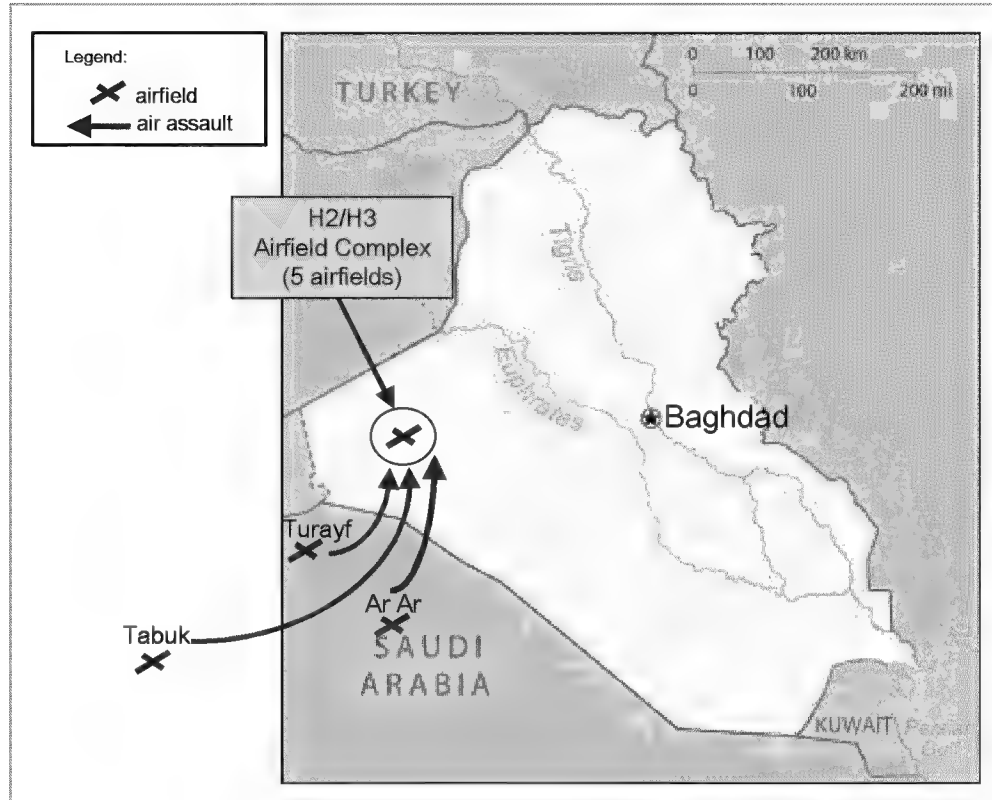


Figure 2. Desert Storm Scenario: Initial Airmobile Assaults

The initial assault force lands directly on the heels of Navy and Marine air strikes launched from carriers in the Red Sea, Air Force A-10 strikes launched from eastern Saudi Arabia, and Army attack helicopter strikes launched from forward area re-arm/refuel points (FARRPs) in northwestern Saudi Arabia.

Airborne electronic attacks disrupt Iraqi radars and communications to suppress air defenses, sow confusion, and help induce paralysis. Also closely timed to follow on the heels of the strikes, five U.S. and allied airborne infantry battalions (three U.S., one United Kingdom, one French) staging from Cyprus would drop into H2 and Ar Rutbah airfields, completing the capture of a base area in western Iraq and severing Iraq's only remaining land route to a neighboring country.

**Day Two.** The U.S. and Allied Army and Marine infantry battalions in western Saudi Arabia are reinforced at newly captured airfields in western Iraq by a light infantry division arriving by C-130 and C-17 from Tabuk, Saudi Arabia. Without waiting for the re-

inforcements, the *Hammer Force* conducts airmobile assaults against three airfields along Iraq's Scud Belt, the range fan from which Scud missiles could be launched against Israel to disrupt the coalition. The bases are Al Qaim near the Syrian border, H-1 in Iraq's western desert, and Qasr Amij nearer the Saudi border.

Special Operations Forces (SOF), covertly deployed into western Iraq days before the assaults, keep the bases under surveillance before the assault forces arrive, reporting enemy dispositions and activity. Again, coordinated air and attack helicopter strikes and electronic attacks exploit sensor and SOF reports to disrupt or disable enemy defenses on and near the airfields.

**Day Three.** Some of *Hammer Force's* infantry battalions, supported by Army and Marine helicopters, hop constantly all along the depth and breadth of the Scud belt to find and flush hidden missile launchers, communications nodes, and stores of missiles. They are aided by unmanned aerial sensor platforms and Army air cavalry troops operating from FARRPs near newly captured airfields or highway strips.

Concurrent with airmobile operations along the Scud Belt, nine U.S. and allied battalions follow up closely timed air and attack helicopter strikes and electronic attacks to capture Assad, Taqaddum, and Ramadi airfields on or near the Euphrates River (see Figure 3 on the next page). The attacks are not intended to hold any territory east of the Euphrates, but to draw elite Iraqi reaction forces—the Republican Guard—out of hiding to react to what would be a clear threat to Baghdad, Takrit, and Samarrah, three cities of crucial political and military importance to Saddam Hussein.

At the same time, all U.S. heavy ground forces of the *Anvil Force* attack from eastern Saudi Arabia to seize crossings on the Euphrates River at Samawah and Nasiriyah. Their objective is to cut roads and rail lines north of the river and stop any movement of Iraqi forces toward the Baghdad area from southeastern Iraq and Kuwait.

Iraq would then face two dilemmas:

▶ The capital, under direct threat of ground attack, would be cut off from the regime's most capable security forces.

▶ The lone Republican Guard Division remaining in the Baghdad area would have to disperse widely to protect numerous sites of high importance to the regime.
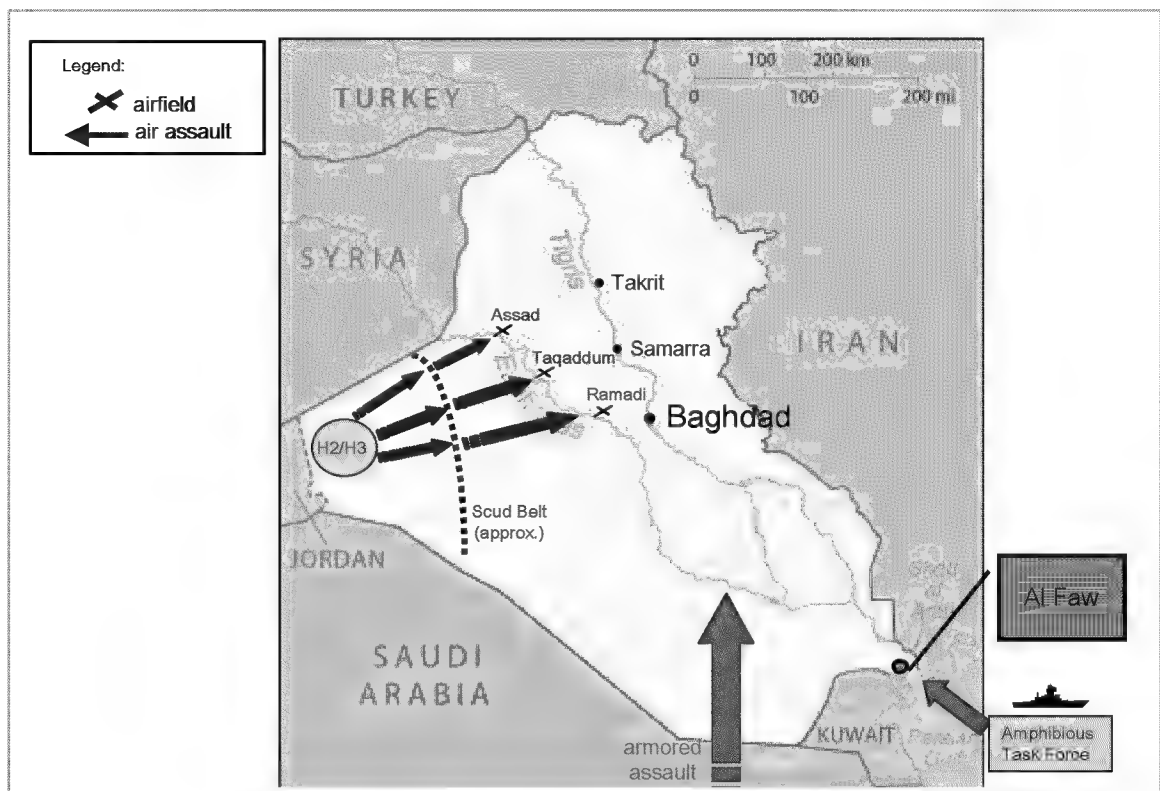
Figure 3. Desert Storm Scenario: Days 2 and 3

## 4.1.2 Addressing Enemy Vulnerabilities

Could Saddam have left the Republican Guard arrayed just north of Kuwait with his power base threatened at home? Had Republican Guard units been ordered home to protect vital sites, the allies could have benefited from the sudden troop movement of enemy forces; for example:

▶ Republican Guard units would have been forced to travel hundreds of kilometers by road and rail—a much easier target for allied air attacks rather than in southern Iraq where Republican Guard units were dug in and camouflaged.

▶ Those who managed to return home would likely have revealed to overhead surveillance what Saddam considered most important by where they were repositioned.

▶ Moreover, their remaining strength would have been dissipated to protect numerous static sites.

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► Would Iraq's largely conscript Regular Army have stayed in Kuwait if the Republican Guard was no longer arrayed behind it? Already demoralized and deserting in large numbers before fighting with the coalition began, some Iraqi units might have dissolved or even mutinied.

Saddam Hussein might have believed he could ride out air attacks in hiding but would likely have had different ideas if he thought ground troops, perhaps including his own, might soon be looking for him. Having made a career of killing off potential competitors, he knew he had plentiful enemies in his own country that would eagerly help the coalition hunt him down.

This scenario exploits the greater integration of air, land, sea, and space capabilities to exert greater pressure on the enemy. The combination addresses an enemy's psychological vulnerabilities as well as his military capability.

## 4.1.3  Organizing for Quick Success

### Standing JTF headquarters

"Born joint" command and control is central to paving the way for changing the way forces are packaged and employed. *Standing JTF headquarters* are key force elements, demanding the same high standards of personnel, training, and materiel readiness and the same force apportionment treatment as major combat units or weapons systems.

If a mission-specific number of standing JTF headquarters had been apportioned to each geographic commander in chief (CINC) in peace and war through the Joint Strategic Capabilities Plan, the CINC of US Central Command could have employed two subordinate JTFs. One (JTF North) would have been assigned responsibility for joint and combined operations against Iraq's interior. The other (JTF South) would have been responsible for the Arabian Peninsula's direct defense. This would have left the CINC freer to:

► deal with Washington, the coalition, supporting CINCs, the media, and other external influences;

► give strategic direction to the overall effort; and

► keep one eye on developments in other parts of his broader geographic area of responsibility.

Dividing the effort between two subordinate JTFs would have corresponded to the coalition's dual nature. Most non-European members were there to help defend Saudi Arabia and some were willing to help liberate Kuwait, but none, except perhaps Egypt, was

willing to participate in ground operations in Iraq. Britain and France placed no such restrictions on the use of their ground forces.

## Combined Air Operations Center

The CINC may need a way to quickly shift his most fungible assets if either the offense or defense got in trouble. One solution would be making a Combined Air Operations Center (CAOC) responsible for allocating all air and missile assets to the JTFs according to the CINC's priorities and giving it authority to de-conflict all flights and long-range fires. A CAOC's writ would ideally extend to most things that fly, including tactical aviation (except transport), theater air defenses, selected aerial sensor platforms, and indirect fire weapons capable of engaging beyond a prescribed range. Such an arrangement would have given the CAOC the ability to pick the most practical and efficient set of response tools across all Services and allies, and provide them to a JTF commander in mission-specific packages, according to his timetable.

## Complementary Operations: Air Mobility and the Ground Component

Central to a bolder way to fight is flexibly packaging joint forces and exploiting geography in ways that most quickly get at an enemy's vulnerabilities, confront him with a strategic dilemma, and foreclose his most damaging options near the onset. If such a bold concept had existed in 1991, it would have employed air, land, and sea forces in flexible combinations to exploit Iraqi vulnerabilities and use Iraq's geography to best advantage. For ground forces to provide the complement to deep air and missile attacks missing in past conflicts, they must be capable of the following:

- ▶ greater speed than opposing reaction forces,
- ▶ high-tempo operations on enemy territory,
- ▶  being supported from afar, and
- ▶ integrated operations with forces from other Services and allies.

Exploiting the inherent speed of air mobility to enable ground forces to complement air operations would have given the allies the following advantages:

- ▶ **Deep-reaching operations.** An airmobile ground component could conduct deep precision operations, operate at considerable distances from its support establishment, and disperse both its combat and support elements, thus accelerating deployment and reducing the need for large, vulnerable logistical concentrations. Allies could have been employed on U.S. aircraft, as they were in Vietnam. Air mobility also enables rapid movement across a vast area without having to occupy it all or protect long, tenuous supply

lines. This transforms ground operations into something more like the fluid, deep-reaching naval operations conducted in the Pacific during World War II than the slower, broad front operations characteristic of the European Theater.

▶ **Early entrance of allies.** Changing the predominant allied force requirement from heavy to light would have enabled Britain, France, and Egypt to get their contingents in before the end of September. This would have imposed less of a strain on their much smaller strategic mobility and logistical resources, enabling them to do more for themselves and reducing the U.S. strategic mobility and support burden.

▶ **Exploitation of advantages.** An RDO 2010 approach would have pitted the coalition's strength against Iraq's weakness. Iraq had an armored force of the kind its Soviet mentors had—support-intensive, dependent on roads for sustainment, and ponderously slow relative to air mobility. Iraqi armor could not move long distances without getting onto rails and roads, and would have taken days to move as far as an allied airmobile force could move in hours.

▶ **Reduced missile threats.** Such an attack would have quickly overrun the narrow band of Iraqi territory from which Scud missiles could reach Israel, depriving Saddam of the ability to provoke a response—Israeli's attacking Iraq—that would have threatened the coalition's cohesion. Airmobile forces, hopping constantly from place to place throughout the western desert, would likely have flushed slow-moving Scuds out of their hide sites, catching them in open desert before they could reach refuge in populated areas east of the Euphrates.

▶ **Reduced enemy options.** Air mobility would have deprived Iraq of a quick counter. Re-targeting its surviving Scuds against a complex of airfields in western Iraq captured by the United States would have accomplished little even had there been sufficient time. Most airmobile forces would have been on the move toward the Euphrates, and their logistical support would have been distributed in small, mobile clusters, leapfrogging into freshly captured airfields or highway strips right behind the assault force. The closer the airmobile force got to Iraq's center, the less feasible a Scud attack would have been.

▶ **Draw play.** It would have drawn Iraqi armor and infantry out of dispersed formations and camouflaged positions onto roads and rails where they

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would have been easy targets for air power. Even if the Iraqis could have mounted a credible threat to airfields near the Euphrates, an airmobile force could have backed away as quickly as it came, drawing the Iraqis further from their supply bases and across the Euphrates into open desert—a rich target for which A-10s, Harriers, and attack helicopters, when employed in concert, are well suited.

▶ **Focus on enemy vitals.** The coalition's land and sea-based fighters, long-range bombers, and air- and sea-launched cruise missiles would have been freed to concentrate exclusively on Iraq's political and military command and control, communications nodes, mass casualty capabilities, intelligence and repression organizations, supply depots, and air defenses. Round-the-clock air and missile bombardment of Iraq's strategic center without respite would have had the intended effect of exhausting and unnerving enemy leaders and severing their connectivity to military forces, external support, and the civil population.

▶ **Multiple attack operations.** The combined air and missile offensive and the air assault from western Iraq would have taken considerable pressure off the U.S. and allied armored forces deployed to northeastern Saudi Arabia by the end of September 1990. As the airmobile assault neared the Euphrates, it might have drawn off sufficient opposition to permit the coalition armored force[4] to attack along Kuwait's western border, compounding Iraq's dilemma.

Once the airmobile assault reached the Euphrates, the air-missile and ground efforts would have converged. While some targets would remain air only or missile only, the air and ground efforts would become fully integrated, capitalizing on synergies inherent in their combined application. Objectives for the ground component would be selected to:

▶ flush high value assets out of hiding,

▶ confirm bomb and missile damage,

▶ capture sources of information to expose elusive targets and their linkages,

▶ minimize the prospect of Iraq's mass casualty weapons being resurrected after the war, and

▶ fragment the Republican Guard's cohesion.

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[4] Mainly U.S. and Gulf Coordination Council units in this scenario.

Joint and combined raids into central Iraq would have varied in intensity and scale, depending on the objective and intended effect, but would have been clustered in ways enabling mission commanders to achieve an effect specified in the CINC's guidance and the JTF commander's plan—*effects-based thinking and operations*. All could have been conducted from dispersed bases west of the Euphrates River where there is little habitation, providing an added measure of security and confronting the Iraqis with a major obstacle. At the same time, the Euphrates would have posed no obstacle to an airmobile force that could attack in concert with air and missile strikes anywhere throughout Iraq's depth and withdraw quickly to a sanctuary established on Iraq's own territory. Such an approach could have substantially narrowed the target set for air and missile attacks, allowing greater concentration of effort against Iraq's most valued assets.

During the Gulf War, more than 18,000 fighter and bomber sorties were flown, of which nearly 3,000 flew against suspected Scud sites (no Scuds were ever confirmed destroyed), and nearly 6,000 against the Republican Guard.[5] Overrunning the western Scud belt with an airmobile force in roughly 72 hours and then raiding Iraq's interior with an air-ground combination beginning on the war's fourth day would have freed air assets for more intense bombing of air defenses, political and military command and control, intelligence and repression organs, and WMD facilities. These critical targets received a combined total of less than 2,500 sorties throughout the war, and many were never found or could not be struck by kinetic means because of collateral damage considerations.

Likewise, the Republican Guard's destruction would likely have required substantially fewer sorties and would have been more complete if ground attacks into central Iraq had caused Guard units to move north on roads and rails from dispersed positions west of Basra. Making the campaign an air-ground effort from the start could have made the coalition's air and missile attacks more efficient and effective, concentrating them against a narrower set of targets and having a greater and faster impact. Similarly, it could have made the ground force more effective, enabling its reach and effect to be substantially greater—and thus achieving synergy.

## 4.2   Retrospective: Kosovo

This discussion turns back the clock only a few years but illustrates what might have been possible if U.S. and allied forces had a decade or more experience with RDO 2010's refinement and application before the start of the Kosovo campaign in 1999.

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[5]  *Conduct of the Persian Gulf War*, Office of the Secretary of Defense, Washington, DC, April 1992, p. 159.

The Kosovo retrospective recognizes that the options described in this paper were not politically feasible at the time of the Kosovo operation because there had been no prior political preparation for offensive operations by NATO. Equally important, there was no prior training experience to enable NATO forces to conduct such operations. Neither the NATO nor the U.S. command structure was suitably organized to handle this degree of multi-Service integration.

The notional campaign uses Kosovo to illustrate the flexibility with which the RDO 2010 concept could be applied in a future contingency of similar character, given appropriate changes in (1) joint command and control and (2) joint force application training and doctrine. The approach envisioned is flexible, with campaign objectives and methods of attack tailored to the contingency. In future situations comparable to Serbia's ethnic cleansing campaign in Kosovo, RDO 2010 could be applied against national, sub-regional, or local levels of authority, depending on political guidance. At each level, offensive action would seize the initiative and oblige the enemy to divert resources and attention from his intended aims to address a more serious threat elsewhere.

## 4.2.1  Striking at the National Level

At the national level, U.S. and allied operations could strike promptly and directly against the offending regime and its levers of power. Command centers of the government, armed forces, ultra-nationalist paramilitary organizations, the air defense establishment, and national police headquarters in and near Belgrade would have been the primary targets (Figure 4 below).
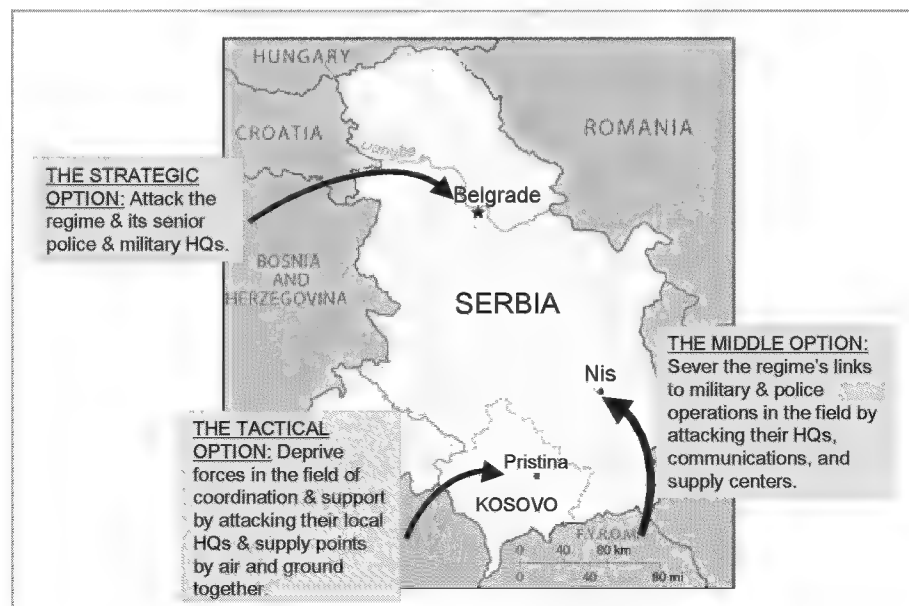


Figure 4.  Serbia Scenario: Multi-Level Choices

U.S. and allied air and missile attacks, accompanied by special operations, forcible entry ground operations, and electronic, psychological, and diversionary attacks, would pose a formidable omni-directional challenge that could be hard to resist if concentrated against a narrow, high-influence target set.

Not all elements of the target set would be known in peacetime, but a networked reconnaissance and surveillance operation, coupled with concerted air-ground operations, could quickly expand the possibilities. Slobodan Milosevic, like Saddam Hussein, had an abundance of enemies in his own country who might have helped an allied force find him and chase him away from his control apparatus, possibly subjecting him to a fate similar to Manuel Noriega's.

## 4.2.2  Striking at the Sub-Regional Level

If an alliance or coalition could not agree to forcibly unseat an opposing regime, RDO 2010 could be applied against lower command echelons to disrupt the connection between the central government and selected armed forces or factions. For example, concerted attacks might instead have been aimed against the Yugoslav Army's less-protected southern command center at Nis and its counterpart, the National Police headquarters, which were responsible for southern Yugoslavia, including Kosovo. Scattering or destroying those command elements could disrupt the flow of supplies, directives, and coordination of effort between the government, army, and national police in and near the crisis area. To avoid further stirring Serbian nationalist fervor or risking counter-concentration, allied forces would have been withdrawn immediately after the raid, leaving behind an implicit or explicit threat of similar follow-on action against higher commands or the government itself.

## 4.2.3  Striking at the Local Level

At a still lower level, the concept could be applied against the next most suitable objectives if political considerations were to limit ground operations to the immediate area of crisis. These might be military, paramilitary, and police headquarters; lines of communication; and supply centers in and around Kosovo's capital, Pristina. One example of a Pristina scenario might unfold as follows.

Concerted air and cruise missile strikes against key facilities in and around Pristina would mark the onset of a synchronized air-ground offensive. Marines arriving by air assault from the Aegean Sea would land near Kosovo's police headquarters. The raiders would land right on the heels of an air and cruise missile strike that hit the hide site of a possible reaction force—a site kept under surveillance by Force Recon or SEAL teams, infiltrating the area several days earlier. SEALs would accompany the Marines to the

objective to rescue captives from a heavily guarded facility. The mission commander would coordinate the timing of air and cruise missile strikes and electronic attacks against potential reaction forces, giving ground units maximum protection on their way in and out.

Concurrent with the Marine raid, an Army infantry battalion, deploying by airmobile assault from Albania at night, would land near the suspected headquarters of political, army, and irregular entities. As the assault force approached, attack helicopters would fire spreads of rockets into areas of likely opposition to reduce the risk posed by shoulder-fired missiles. Most of the rockets would be blast-only munitions that minimize collateral damage, but would nevertheless look and sound like lethal fires. Mixed with the blast-only munitions, a few carefully placed lethal rockets would dissuade gunners from moving into the open to get a shot off. Special Forces teams accompanying the assault force would collect war crimes evidence and capture any war criminals. Language-trained Special Forces personnel would query local civilians and prisoners about the whereabouts of enemy leaders, and a small, specially trained assault force would move in to get them, if feasible, while a security force covered the assault teams' movements.

Before the raid, air strikes would hit selected choke points on road and rail arteries approaching Pristina, keeping enemy reinforcements at bay. While the raid was underway, electronic warfare aircraft would jam and spoof selected enemy communications to heighten confusion and prevent reaction forces from being summoned or properly directed. Accompanying the assault forces would be psychological warfare teams broadcasting to local civilians to stay under cover and warning enemy troops and irregulars to leave the province before it is too late. Before dawn, Army and Marine assault forces, prisoners, war crimes evidence, and freed captives would depart from designated pick-up zones amid air strikes on adjacent approach routes. Not all of the opposing leaders or their staffs could be captured or killed but those who survive would need days or weeks to reassemble a coherent command structure. Knowing they could no longer find safety in the province, they might simply flee. Meanwhile, follow-on attacks would exploit the disruption and new information gained.

### 4.2.4  Unity of Effort and Its Effect

This notional operation emphasizes the synergistic application of multiple types of forces, enhancing the effectiveness of the whole beyond the individual contributions of participating elements. Capturing documents, communications gear, and people at senior headquarters would reveal much about what is going on elsewhere in the province and where other enemy forces are located. The aim is to leave enemy forces temporarily leaderless, making subordinate units uncertain of re-supply or reinforcement and fearful

of being isolated and destroyed piecemeal. Subsequent concerted raids on newly exposed and isolated units could heighten that fear, seeking to precipitate a quick withdrawal from the province.

Without a functioning headquarters that has situational knowledge and communications to coordinate operations, enemy units would be left on their own with little hope of reinforcement, re-supply, evacuation of casualties, or effective fire support. Soldiers who are hungry and low on ammunition, and have no assurance of re-supply or of being evacuated to safety if wounded, are soon likely to seek a way out, particularly if they have lost contact with higher headquarters or have learned that a similarly isolated group was just captured or destroyed. (For example, after contact between headquarters nearly ceased due to fear of electronic homing, Iraq's already demoralized conscript army in Kuwait quickly became ineffective, illustrating the intended effect.)

Attacks against command centers, regardless of the level of authority they address, aim to quickly break enemies' cohesion and heighten leaders' fear of capture. If leaders can be made to flee, be separated from their levers of power, or forced to surrender, their subordinates are more likely to give up the fight.

## 4.2.5 Targeting

At all three levels of authority (national, sub-regional, and local) in the retrospective Kosovo example, the targets are specific nodes, not whole districts, cities, or even substantial parts of them. Forces attacking them are raiders, not occupiers. Command bunkers, headquarters compounds, communications nodes, high-value weapons, supply depots, choke points on key reinforcement arteries, and air defenses constitute the core of the target set, which is a more narrow targeting challenge than trying to find and destroy hidden vehicles and dismounted troops, police, and irregulars all across a province.

In contrast to what actually happened in Yugoslavia, RDO 2010 would conspicuously avoid the destruction of civilian infrastructure needed to restore the region to economic health. This model is based on the example set by operations in Panama in 1989.

## 4.3   Retrospective: Panama and Somalia

Two other post-Cold War contingencies are instructive by their contrast. OPERATION JUST CAUSE in Panama and the second phase of operations in Somalia had as their objective changing the status quo, seeking to remove a troublemaker from power before he could do more harm. Both conflicts resulted from years of escalating turmoil with no end in sight. There, the similarities end.

**Intelligence preparation.** In Panama, a long-term U.S. presence, accompanied by extensive penetration of Panamanian society, made intelligence preparation relatively easy

and quickly exposed Manuel Noriega's place of refuge. In contrast, there was almost no previous U.S. experience or intelligence activity in Somalia, enabling Mohammed Farah Aideed to remain at large and win by endurance.

**Planning.** In Panama, a JTF headquarters was designated nearly a year before and a troop list was developed soon afterward to familiarize participants with the mission and enable them to begin training and coordinating with other commands. But having that much time to organize and prepare is unlikely in most contingencies.

**Collateral damage.** Operations in Panama provide a model for the relationship between collateral damage inflicted and post-war recovery. There, U.S. forces made a conscious effort to make firefights short and decisive, with minimum collateral damage and casualties on both sides. It was widely recognized that every Panamanian life lost would generate resentment lingering long beyond the fighting to make the institution of democracy more difficult.

Although the operation in Somalia began as a humanitarian relief mission, subsequent combat actions gave almost no attention to minimizing civilian casualties or collateral damage. The desperate running gunfight that raged through the streets of Mogadishu on October 3 and 4, 1993, offered U.S. participants few choices. The stage for this fight had been set by a long series of insensitive actions over many months.[6]

**Campaign segmentation.** In Somalia, after months of experience on the ground, the initial force of roughly 23,000 Marines was withdrawn. With almost no overlap between commanders, responsibility passed to an *ad hoc* successor JTF with a fragmented chain of command and fewer than 5,000 troops from diverse organizations who had never worked together and who had a significantly more dangerous mission.

In Panama, continuity of effort was also disrupted when the headquarters that orchestrated combat operations departed with most combat troops when the fighting ended, leaving civil order and reconstitution to be handled by a less capable headquarters that had few resources. The resulting lawlessness and destruction of public and private property by ungoverned mobs shattered the opportunity for a smooth transition to civil authority.

**Lessons.** Mixed results in both contingencies—Panama and Somalia—illustrate the importance of continuous joint effort, intelligence preparation, a cohesive joint chain of

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[6] Examples of such insensitivities included antagonizing the populace by blowing the roofs off houses with helicopter prop wash or hovering over open outhouses (see Mark Bowden's *Black Hawk Down: A Story of Modern War,* Atlantic Monthly Press, New York, 1999, p. 22).

command with clear lines of authority, joint training, prior coordination among participants, and a clearly defined mission.

## 4.4 Lessons for Future Operations

**Focus early on breaking enemy cohesion.** An operational concept that stimulates creative thinking on how to overcome an enemy's central defenses and get at an enemy's vitals with an all-arms force from the onset of conflict could have made a significant difference in the outcome of each of the conflicts. Common to all the scenarios described is the importance of focusing on an enemy's cohesion and critical capabilities *from the outset.*

It is usually the opposing leadership's ambition—whether motivated by power, greed, ideology, or nationalism—that precipitates a crisis. Leaders orchestrate strategy, issue directives for military action, and synchronize military and civil activity. If mass casualty weapons are involved, their employment will almost always be decided at the top of the leadership chain because political leaders in any society are usually distrustful of giving subordinates autonomous control over weapons or forces that could directly or indirectly bring about their own or their nation's destruction.

**Render enemy leadership ineffective.** Of the options for stopping or reversing an enemy's actions—turning the people against their government, defeating an opposing military, or rendering enemy leadership ineffective—the last one is nearly always the fastest and most decisive, although perhaps the most difficult.[7] History demonstrates that the alternatives take longer and are significantly less likely to change the status quo. If an autocrat leads the opposing country or group, he probably holds a near-absolute monopoly on armed power and has already eliminated key enemies, making it nearly impossible to unseat him from within.

The catastrophically failed attempts to remove Adolph Hitler and Saddam Hussein are instructive. Punishing the general populace with economic sanctions, bombing economic infrastructure, or killing conscripts in battle affects those who are least able to influence their government's actions. If, on the other hand, a leader and his closest circle of supporters are placed under intense personal pressure from the air and ground in concert, they are more likely to change course or flee than if the populace or conscripted troops are made to bear the pain.

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[7] Remarks on asymmetric warfare by Major General Robert Scales, Commandant, US Army War College, November 15, 1998.

**Employ standing JTF headquarters.** Also common among the retrospective scenarios is the importance of joint command and control structures capable of orchestrating joint operations against an enemy's vitals *from the onset of operations.* Creating standing JTF command and staff teams in each of the geographic unified commands and training them together in multi-echelon command and staff exercises should make such operations possible. Considerations for forming such headquarters are described in Appendix A.

**Integrate ISR efforts.** "Low density/high demand" is a term routinely and appropriately applied to sensor platforms of all types, but more is missing than just systems. Sensors and intelligence assets are "stovepiped" by ownership and function, making it difficult to correlate their output. As information sources become more diverse, and commanders exploit reach-back to distributed information centers worldwide, the problem of stovepiping will grow in scope and complexity. If information is to be an enabler of future operations, providing commanders with a synoptic picture of their area of operations and allowing forces to share a common relevant operating picture, then timely correlation of information from diverse sources and its prompt dissemination to users will be critical. Some considerations are discussed in greater detail in Appendix B.

**Exploit air-ground synergy.** While recent conflicts have demonstrated the great utility of aerial or cruise missile attacks for limiting friendly casualties, they have also demonstrated the limitations inherent in employing only one form of military power and segmenting aerial and land campaigns. RDO 2010 offers a way to bring all forms of military power to bear synergistically. Its benefits include complicating an enemy's response options, sharply limiting his time to adapt, providing greater flexibility, and achieving a *rapid decisive outcome.*

However, making the ground components of the force more readily interactive with the air and naval components has become increasingly challenging. Forces that can deploy quickly are generally too light to do enough when they arrive; and those offering greater firepower are too heavy and support-intensive to deploy quickly or without benign access to ports and airfields.

While embracing the importance of heavy ground forces, RDO 2010 describes new roles for lighter ground forces by exploiting the combination of aerial mobility and light ground transportation and robotics, and employing them in close concert with air and missile bombardment and non-kinetic forms of attack. Some considerations influencing this issue are cited in Appendix C.

# Appendix A. Joint Command and Control

So far, this paper described a bold joint force application concept and applied it retrospectively to past conflicts. This appendix explores a way to *enable* a transition to such operations, focusing on relatively low-cost organizational changes that take advantage of the benefits of joint command and control.

## A.1 Obstacles

**Perspective.** Any single Service given responsibility for a challenge like Kosovo would rightly view the mission as too hard. Indeed senior Air Force officers expressed exactly that concern during the conflict. At the root of the problem is the experience base of officers charged with planning and orchestrating joint operations in a crisis or conflict. There is little in their backgrounds to give them the perspective to think about the potential synergy inherent in applying multiple kinds of forces as closely coordinated teams. Today's emphasis on joint operations reflects acknowledgement of the problem, but except for a few functions (such as close air support, strategic mobility, and air defense suppression), truly joint effort remains in its infancy.

**Interoperability.** Another problem is that the Services develop materiel and software requirements for their operational-level headquarters that may not "net"—that is, interoperate—with those of other Services. A consequence is expensive "black box" workarounds and risk-laden gaps in connectivity.

Who is empowered to overrule a Service's development or choice of hardware or software? Are existing DoD guidelines sufficiently strict to enforce compliance with interoperability standards? Are the standards themselves sufficient to ensure equipment is mutually compatible? Arguments that "all is well" fall flat when measured against the realities.

**Ad hoc structure.** Joint doctrine and the Unified Command Plan describes the level of joint authority below a CINC as a JTF but the only standing, deployable JTFs that exist are for highly specialized roles such as Civil Support and SOF. *Ad hoc* JTFs may suffice for missions involving little risk to U.S. security[8] but not for joint combat operations in which practiced teamwork and joint planning are central to success. The current process of forming JTF headquarters around operational-level headquarters of the Services suf-

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[8] One example is OPERATION SEA ANGEL, a humanitarian rescue and relief operation conducted mainly by the US Marine Corps in Bangladesh.

fers difficulties born of human nature. Participants may eventually work around the obstacles, but it takes time that most missions, combat or otherwise, cannot afford.

**"We-they."** When a contingency arises, some CINCs send a multi-Service augmentation cell from their own headquarters to give a particular Service headquarters the perspective and staff composition it needs to function as a joint command. The outcome is less joint than intended. Pre-existing relationships of trust and confidence within the augmented headquarters, differences in planning and coordination procedures, and an instinctive "we-they" orientation toward newcomers, particularly those wearing a different uniform, all contribute to diminishing the team effort crucial to success in a high pressure environment. Achieving teamwork requires time and shared experience.

**DJTFAC**. Designated JTF augmentation cells (DJTFACs) can train with the same Service headquarters several times annually. Likewise, staff and communications operating procedures can be standardized among augmented and augmenting commands to simplify the transition for augmentees. These steps would create a higher degree of teamwork and greater effectiveness than is now possible, as US Pacific Command is demonstrating with its Joint Mission Force initiative. But inherent limitations still exist:

▶ Every DJTFAC has to be tailored to the unique needs of the Service headquarters it augments because no two Services or headquarters organize the same way, requiring augmentation with different expertise. This can be very disruptive for the sending headquarters.

▶ Training DJTFACs with augmented Service headquarters long enough to create genuine teamwork is difficult. There are few opportunities to train together each year, and the turnover of people in the sending and receiving headquarters makes every exercise a new quest for forming new interpersonal relationships of trust and confidence.

▶ The more headquarters requiring augmentation, the more protracted and disruptive the loss to the sending commands. The practical difficulties severely limit the time available to cultivate teamwork.

**Illusory jointness**. Augmented Corps, Fleet, Marine Expeditionary Force, and Expeditionary Air Force headquarters acquire only a patina of jointness: commanders, deputies, staff principals, and the overwhelming majority of staff members, even after augmentation, are from one Service. Relationships of trust and confidence honed year-round between those commanders and their staff principals endure in a crisis, making it

very difficult for an outsider to assume a principal staff role and exert similar influence.[9] The same is true for subordinate staff section chiefs. It defies human nature to ask someone to have a trusted subordinate step aside in favor of an outsider whose abilities are unknown.

## A.2 "Born Joint" Headquarters

There is an alternative model. A number of small "born joint" headquarters in each theater could be created by reallocating existing headquarters spaces[10] to serve either as a CINC's forward headquarters or the headquarters of a JTF. The headquarters would be apportioned to regional CINCs in the Joint Strategic Capabilities Plan on the basis of the CINC's assigned contingency missions. They would be subjected to the same standards of personnel, materiel, and training readiness as a combat unit or major weapons platform. Performance standards for such headquarters would ideally include the ability to:

- ▶ Deploy with as little as 48-hours notice with a fully trained staff and all necessary communications equipment.

- ▶ Conduct mission planning, coordination, and re-tasking en route to a contingency theater.

- ▶ Exploit communications reach-back to distributed, non-deploying information sources worldwide.

- ▶ Tailor staff organizations and procedures to deal with fleeting targets and stay ahead of the enemy's decision-making cycles.

- ▶ Be able to operate from a command ship or a secure land base, while also enabling the commander to take a small staff anywhere in the area of operations to gain a personal feel for the evolving situation.

- ▶ Exercise with and be able to integrate coalition partners into the JTF command and staff structure or to integrate the JTF headquarters into a coalition command structure.

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[9] Augmentation with a general officer from another Service was tried with the Fleet headquarters in Grenada and the Marine Expeditionary Force headquarters in Somalia. Both augmentees reported unsatisfactory "outsider" relationships with their peers.

[10] Headquarters spaces would likely come from either (1) a consolidation of non-deploying Service component headquarters into a single worldwide Service component headquarters for each Service or Department to support all CINCs, or (2) conversion of some of the Services' deployable headquarters to joint headquarters.

Command relationships should enable joint force commanders to form joint force packages with assets drawn from any combination of Services, including those of allies, without going up and down multiple stovepipe chains of authority for approval—in short, a flatter, less Service-centric command structure. Options include:

▶ Forming within a CINC's staff a deployable "CINC forward" headquarters that can be commanded by either the CINC or DCINC[11] for exercises and contingencies. This arrangement avoids the disruptive process of augmenting other headquarters; provides CINCs theater-oriented staffs with shared experience; and provides flexibility in organizing for a mission.

▶ Creating one or more standing JTF headquarters under each theater CINC, explicitly at the expense of Service component headquarters.[12] (This option is featured in the Iraq retrospective on page 11.)

In either alternative, joint commanders would draw from a menu of ready forces to form mission-specific force packages and target them against clusters of important facilities and sites. Under all options described, a CAOC would remain a clearinghouse for all manned and unmanned flights and fires exceeding a specified range and altitude.

## A.3   Leadership

Figure 5 on the next page illustrates a model of how a streamlined theater command and control structure might work in a contingency of Kosovo's scale.

▶ Rank structures would likely be elevated for a larger contingency on DESERT STORM's scale.

▶ Leader development considerations build from this model. While training and experimentation will determine how much flatness is practical and what experience and expertise are necessary in a forward staff, some recommendations for leader development are appropriate.

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[11] Deputy CINC.

[12] Past theater CINCs vigorously opposed accepting a JTF trained in the United States by another CINC, preferring to rely on a headquarters formed and trained under their own control.

**JTF Commander's responsibility is specific to the contingency (operational perspective)**

**Service components provide ready forces, mobility, and support to JTFs**

**CINC's responsibility is theater-wide (strategic perspective)**

**Joint mission commanders from any Service apply joint forces on a mission basis (tactical perspective)**
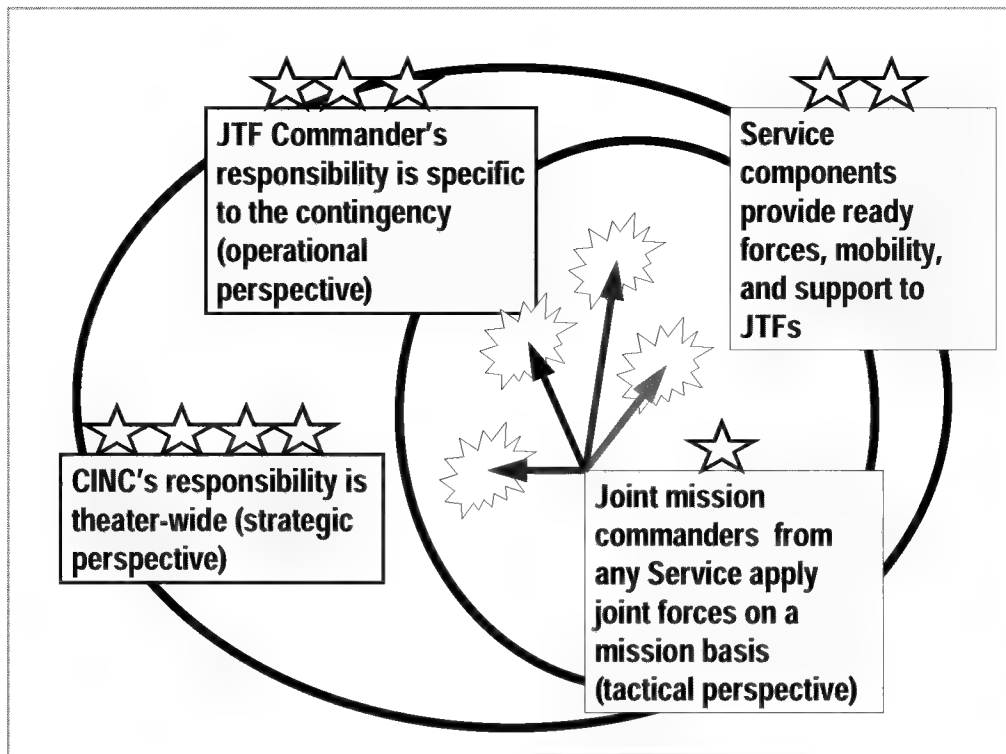
Note: The number of stars above each box indicates the grade of the commander.

Figure 5.  A Model for a Streamlined Theater Command and Control Structure

**O-7 level.** The O-7 level[13] of command is suggested as the lowest level of joint integration because officers of that grade already posses the joint experience, schooling, and perspective needed to employ the assets of multiple Services. If tasked to serve as a joint mission commander, the officer should be able to quickly take charge of a multi-dimensional joint force and *orchestrate* its application in a small geographic area to achieve a specified effect in a prescribed time. In larger contingencies, joint mission commanders might instead be O-8s.

▶  Joint mission commanders would constantly coordinate with each other to share information and de-conflict timing and movement, a continuous process of self-synchronization that should become easier as new information aids are acquired and suitable joint training opportunities are generated.

▶  Achieving these aims will require unit commanders of all Services to think in terms of fighting jointly at lower command levels. Enabling them to think that way requires giving them shared training experiences that make teamwork possible.

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[13]  O-7 is a brigadier general or rear admiral (lower half). O-8 is a major general or rear admiral (upper half). O-9 is a lieutenant general or vice admiral. O-10 is a general or admiral.

▶ After completing the mission, commanders should be able to shift their assigned forces to a follow-on target or objective, perhaps acquiring new components and shedding others, a task requiring practiced teamwork among commanders and staffs.

**O-8 level.** Officers at the O-8 level would be Service component commanders (in smaller contingencies), deputy JTF commanders, joint mission force commanders (in larger contingencies), or the principal staffs of the CINCs. In small short-duration contingencies, Service component commanders would normally take no direct role in the direction of operations. Those assigned as Service component commanders would be responsible for providing ready forces, mobility, and support from theater-apportioned assets to support JTF commanders according to the CINC's priorities.

**O-9 level.** Officers at the O-9 level would be DCINCs, Service component commanders (in larger contingencies), or JTF commanders, shifting operational-level responsibility from the Services to joint authority. A theater CINC may have a number of subordinate JTFs specific to his mission. They would be apportioned in the Joint Strategic Capabilities Plan, maintained at readiness standards approved by the Secretary of Defense, trained and oriented to specific contingencies, and exercised together to promote mutual support and self-synchronization.

## A.4    JTF Headquarters Mobility

Today's large headquarters and their associated support structures create heavy demands for strategic air mobility, already scarce, early in a deployment when delivery of combat power is most critical. Once in place, these headquarters are hard to move or hide, making them easy targets for missiles. Protecting them against terrorists or commandos adds still more manpower and equipment to the deployment list. The dilemma could be overcome by operating most JTF headquarters from command ships assigned to and home ported in each theater or pre-positioned for exercises and contingencies. Commanders and staffs could fly forward to meet the ship, saving days of deployment time and numerous sorties of cargo airlift now used to move their equipment and support. It is recognized, however, that in some cases, JTF commanders would have to operate ashore because of the need for close coordination with coalition partners. In other cases, allies could operate as members of the JTF headquarters aboard a command ship.

Operating from a command ship would avoid the time and resource-consuming task of packing, deploying, and unpacking large volumes of communications gear and support equipment during deployments. It would also obviate the need for maintaining dedicated support elements (food service, administration, transportation, communications, etc.), using instead the ship's support infrastructure and mobility as a way to trim man-

power requirements and to reduce demands on strategic mobility in the critical early days of a contingency. During contingency operations, joint force commanders could move further forward by command helicopter or VSTOL (vertical short take-off and landing), going wherever they consider necessary to keep their finger on the pulse of operations. When not deployed, JTF headquarters would ideally be supported by the same assets as those supporting the CINCs' headquarters.

This streamlined approach to joint command and control raises a number of issues, among them:

- How should a mobile JTF headquarters be organized and equipped?

- What reach-back links does it need to outside sources of information and expertise?

- What operating procedures best facilitate its planning and decision speed?

- How does it stay connected to a diverse, widely dispersed force?

- What are the limits of its span of control, and do they change by type or complexity of contingency?

- What support provisions are needed for operations ashore instead of at sea?

An experimental testbed headquarters being formed under US Joint Forces Command (USJFCOM) could "shake out" answers to the above questions. There is, however, a problem no CINC can solve. Unless the Secretary of Defense institutes a worldwide command structure review, generating the necessary joint billets and changing the alignment of Service and Joint responsibilities is impossible. The absence of such a review would make a bold new way to fight less feasible.[14]

## A.5   Functional Management Centers

At least three functions supporting JTF headquarters merit unique status and experimental attention: air operations, logistics, and ISR. Information operations may also fall into that category due to its unique relationship to national policy and political guidance.

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[14] The Unified Command Plan deals only with unified and subordinate unified commands. There is no comparable review process for collectively changing the Services' command structure or re-allocating selected command functions from the Services to joint organizations. It is unrealistic to assume that any Service would voluntarily or unilaterally give up control over any billets or command structure, even though many who populate or lead today's commands agree that some have become anachronistic. Thus, an externally driven review process would be needed to change the paradigm.

Experimentation would explore the composition and organization of these centers, what new tools they would need to enable their operation, whether they need to deploy into harm's way or can best operate from home stations, and whether they are best embedded in the CINC's headquarters or operate as stand-alone entities. Examples of stand-alone entities include:

▸ **A CAOC**, responsible for providing mission-specific packages of joint U.S. and allied strike aviation and long-range land and sea-based fire support to JTFs according to the CINC's priorities. The CAOC would become a "born joint" organization, staffed by all Services and commanded by an officer with requisite experience from any Service. A CAOC would also serve as the single airspace manager in each theater, responsible for de-conflicting everything that flies above a given altitude, including indirect fires. Finally, CAOCs would serve as contingency theater air defense coordinators, linking air defense capabilities of the Services into a single coherent framework under a single commander in each contingency theater.

▸ **A Joint Logistics Center** in each contingency theater to coordinate emergency mutual support among the Services in response to the CINC's priorities. The center would also have responsibility for (1) maintaining visibility over materiel and personnel readiness and supply transactions; and (2) coordinating intermediate staging, reception of strategic deployments, host nation support arrangements, and theater mobility operations in support of JTFs and the CAOC.

▸ **A Joint ISR Integration Center** in each theater to cut across "ownership" and focus the application of selected high impact ISR resources in response to the CINC's priorities. The Center would also have responsibility for receiving sensor and intelligence input from all sources in and supporting the theater, correlating it to generate a common relevant operating picture, packaging it in readily usable format, and disseminating timely information to commanders at multiple echelons of authority.

# Appendix B. ISR Integration

Hardware takes years to develop, field, and learn to use. This appendix looks forward 10 years to see what could become possible if, in addition to changes previously described, promising new technologies were exploited and tradeoffs were made to resolve today's "low density/high demand" and "too slow" problems.

## B.1 Decision Superiority

ISR exists to provide the National Command Authority and military commanders the information they need to make informed and timely decisions. The power and speed of today's automated information processing capabilities is likely to be compounded many times over by 2010, giving commanders unprecedented opportunity to fight in ways unknown to their predecessors. This does not mean the fog of war will be erased. War is a constant process of adapting and counter-adapting in which people seek to survive by any means available, especially by deceiving their enemies. Finding the clues to avoid surprise requires a trained eye and skillful acquisition, packaging, and use of information. Nations able to use information technology as a tool for increasing the tempo and precision of military operations will have a decided advantage in both crisis and war, reducing an enemy's opportunities to adapt before the next surprise is sprung.

More than just an amalgam of technologies, ISR includes human reporting from intelligence, operational, and technical sources, and—most importantly—includes the consumers of information. Taking advantage of information superiority will require organizing to accelerate its flow. Old ways of organizing will no longer suffice. Multilayered, stovepiped staff sections operating in frenzied environments must give way to smaller, more efficient staffs working in facilities conducive to concentration. The control towers of busy international airports illustrate the potential. There, a very small number of operators communicate quietly through headsets, hand off information effortlessly from one workstation to another, track hundreds of entities at once, and interpret the potential consequences of multiple courses of action while simultaneously giving instructions that can mean life or disaster to thousands each day. Their supervisor maintains an "intervention by exception" posture, able to see on a flat screen display the same aircraft tracks and all-around camera images of the airfield that operators see at their workstations. Control and shared situation understanding are axiomatic in that environment.

As important as the timely gathering of information is its *correlation*, its *packaging* in a format that is intelligible at a glance, and its *timely dissemination* to all who need it. Ex-

perimentation can determine the best way to do this, but a good start might be the CINCs' intelligence centers, recast as all-source information centers, run by generalist information officers who exploit automation to quickly ferret out the unimportant, find the essential, and get it to users in near real time—a tall order but a standard worthy of the information age.

## B.2   ISR As a Force Element

No longer just a supporting capability, ISR can be an influential tool for shaping events before, during, and after a conflict. For example:

▶ Years before a crisis arises, ISR can generate baseline data ("background") on selected activity patterns and conditions in areas of chronic turbulence. When a crisis arises, this background can enable automated detection of changed activity and quick analysis of what it might mean. This cannot be done without rethinking priorities that today result in low density/high demand. Today's limited surveillance capabilities are fully committed to day-to-day requirements, leaving little room for baseline database development.

▶ When a crisis arises, ISR output can be used to convince prospective coalition partners and regional hosts of an enemy's misdeeds or preparations for aggression. It can also be used to deter or dissuade, showing an enemy that U.S. forces know precisely where critical activities are taking place and what is happening. Rules of engagement will determine how much can be done to intensify this focus because air-breathing aircraft[15] intrusion and cross-border activities on the ground may be restricted by political considerations.

▶ Unmanned platforms offer new options for providing selected ISR output to allies, indigenous forces, or international news services to expose an aggressor's activities and enable targeting or avoidance of particular sites or actions.

▶ If U.S. forces must be committed, ISR enables targeting of activities or facilities critical to influencing an enemy's ability to continue actions that precipitated the conflict. Networking manned and unmanned surveillance and reconnaissance assets to make them self-synchronizing, automating the correlation and dissemination of their output, and linking them directly to multiple attack capabilities, including ground maneuver forces, could reduce the

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[15] Aircraft that operate within the earth's atmosphere.

time gap between the acquisition of knowledge and an effective response in practically any kind of contingency.

▶ In addition to its direct military applications, integrated ISR can also provide information on refugee flows, natural and man-made environmental disasters, or cross-border traffic. It becomes a tool for focusing responsive action, making border control more efficient, or anticipating and promptly reacting to humanitarian needs.

## B.3  Low Density/High Demand

The value of ISR and its role as a force enabler or independent tool of diplomacy and war strongly suggest rethinking priorities that currently result in "low density/high demand" ISR capabilities.

The concerted application of diverse ISR assets is as important as the concerted application of other forms of combat power. Subjecting a possible target area to multiple forms of unobtrusive and intrusive snooping can provide confirmation, add depth, fill coverage gaps, or generally increase the ubiquity of intrusion and the joint force commander's breadth of knowledge. Networking human surveillance, seismic ground sensors, electro-optical sensors, forward-looking infrared sensors, foliage-penetrating synthetic aperture radars, and ground moving target indicator radars offers a flexible suite of tools to mitigate enemy deception and shielding efforts in diverse terrain and visibility conditions.

## B.4  Information Correlation

Cutting across intelligence and operations "stovepipes" should radically improve understanding of the total operating environment. Automated dissemination according to pre-set rules or protocols could further enhance processing speed. But information flow should be dynamic, able to respond to changing conditions and needs. Thus, an automated information processing system needs the built-in flexibility to allow quick refinement or re-formatting to keep it responsive to the needs of decision-makers at multiple levels.

## B.5  Tenuous Linkages Among Sources of Information

In war, success depends heavily on developing information on targets such as command centers, communications sites, and mobile missiles, things that are particularly hard to find. It is unrealistic to expect intelligence agencies to discover in peacetime where all the enemy's key nodes are and discover their vulnerabilities and contents. Finding and

characterizing such targets involve slow, tedious analytical work that can take months even with good automated analytical tools. *If wars are to become shorter, knowledge of the enemy's key nodes will have to grow exponentially when fighting begins.* Ground forces, both conventional and SOF, will have to complement the work of intelligence and surveillance operations by uncovering things that remain hidden to aerial surveillance and intelligence sources, and by clarifying what was previously uncertain. When troops enter enemy territory, they capture maps, communications equipment, and documents; they see vehicle and installation markings; they interact with local civilians and observe activity patterns; they perform post-strike damage assessment; and they capture and interrogate prisoners.

These actions all build a clearer picture of what is most important to the enemy and where he is most vulnerable. That dynamic quickly drove Panama's Manuel Noriega into hiding in the Vatican Embassy and enabled American troops to find him there. *Thus, ground operations are an important complement to aerial surveillance and intelligence activity, enabling other forms of reconnaissance and attack to become more effective and efficient—the ultimate measure of synergy.*

## B.6  Immaturity of Information Synthesis and Target Recognition Tools

Bringing together the output of intelligence agencies, reconnaissance and surveillance platforms, operational reporting, and non-military information sources in databases, and fusing and packaging it all in a form that is usable to a joint force commander and his staff are too time consuming to be left to humans alone. Intelligence agencies have already demonstrated that automation can put information from diverse sources into formats pre-selected by using commands to speed the integration and flow of information. Combinations of automated target recognition, new search engines, and protocols for accessing and disseminating formatted output are among the tools needed to assist human decision-makers in planning, tasking, and real-time re-tasking of diverse suites of sensors in future contingencies.

# Appendix C. Joint Force Employment

"We can have a decisive effect on a future battlefield with a 20-kilometer-per-hour Army no more than a two-and-a-half-mile-per-hour Army could at Mons and LeCateau in 1914. We must accelerate the pace of movement in order to be able to achieve decisive effect."

Major General Robert H. Scales, Jr.
*Future Warfare Anthology*, May 2001

RDO 2010's emphasis on taking the offensive from the onset of operations, focusing on an enemy's vitals to disrupt his cohesion quickly, operating at a tempo enemies cannot match, and exploiting synergy makes close air-ground cooperation and interoperability imperative. This appendix gives greatest attention to the ground component of the joint force because, historically, that has been the most challenging force element to employ early.

Moving swiftly from one objective to the next in rapid succession, an initial entry ground force would have to rely heavily on speed and situation awareness, rather than armor, for its protection. What such a force should look like is for the Army and Marine Corps to decide, but joint experimentation should play a prominent role in framing the choices.

Air mobility is no panacea but it does offer a formula for making early deploying air and ground forces mutually supporting. Because air mobility frees ground forces from what Lieutenant General Harry W. O. Kinnard, USA (ret.),[16] calls the "tyranny of terrain," it enables them to outdistance and outmaneuver ground-bound enemies. It also enables surprise, making it difficult for an enemy to recognize when and where an airmobile force will strike. Views on what form air mobility might take if integrated into a joint air-land-sea team tend to cluster around three schools of thought:

▶ To some, air mobility means lifting infantrymen directly to their objective with helicopters like the UH-60 Blackhawk. This school takes a page from the glider assaults of World War II and heliborne operations of the Vietnam era. This concept is most conducive to fast-in, fast-out operations in which

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[16] A pioneer of air mobility, General Kinnard played a key role on the Howze Board that established the air assault concept, and he commanded the prototype division during testing and led the division into combat.

staying power and the ability to slug it out with enemy armor are unnecessary.

▶ Others believe shoulder-fired air defense missiles make landing on the objective too risky and that infantrymen need greater armor protection and firepower when they land. This school generally prefers an air-mechanized force, lifted into battle by large VSTOLs or fixed-wing aircraft transporting light armored vehicles into protected landing areas.

▶ A third school is somewhere in between, recognizing that infantrymen cannot carry all the firepower, communications, supplies, and personal protection gear they need, and that helicopters cannot always land on the objective. This school sees a need for an airmobile force that is lifted into battle by a mix of helicopters and VSTOLs, with the helicopters bringing in assault troops and evacuating casualties, and the VSTOLs bringing in robotic air and ground vehicles that carry heavier firepower and communications gear, and delivering fuel and ammunition for helicopters and robotic surveillance and fire support systems.

Of the three schools, the first and third are feasible today if aircraft can be better protected against enemy air defenses. Aircraft protection urgently needs attention but there are many ways to mitigate their vulnerability. MV-22s and UH-60s, tactical air mobility systems that will still be in the inventory in 2015, can lift troops and light vehicles at speeds far exceeding the response speed of any likely enemy during that time.[17] Once airmobile forces "open the door," vehicle-mounted forces with heavier firepower can be brought into protected landing areas by C-130s or C-17s, platforms that will also still be in service in 15 years. They, in turn, can open the door for still heavier forces when they are needed.

Because of the inherent vulnerabilities of fixed-wing cargo aircraft used in assault roles, RDO 2010 explores lifting airmobile forces into battle by helicopter and VSTOL. VSTOLs and helicopters can potentially self-deploy from intermediate staging bases; they can operate from ships; and they can be supported from FARRPs on enemy territory, giving them considerable operational flexibility. Helicopters enable assault forces to land on or near their objectives, minimizing the enemy's reaction time as well as the time allied troops are exposed to hostile fire before reaching their objective. VSTOLs can

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[17] Others may buy helicopters and VSTOLS, but there is currently no army outside the United States, western Europe, and perhaps Russia and China, that can keep a large fleet of such aircraft operable due to the high cost of spare parts, fuel, and the sophistication of unit and depot maintenance expertise.

bring in heavier loads, including light vehicles, to quickly reinforce heliborne forces, creating a natural partnership between the Army and Marine Corps in early operations. This is quite different from the normal practice of assigning the Army and Marine Corps separate sectors of responsibility.

Although slow on the ground, airmobile troops need not stay at an objective very long and can be lifted from objective to objective by helicopter or VSTOL, moving much faster than any vehicle-bound force. Arriving at the objective, these forces would conduct fast-in, fast-out raids rather than trying to seize and hold ground. Their missions would include uncovering information, assessing post-strike damage, capturing prisoners, liberating captives, or disabling a facility that cannot be destroyed by kinetic fires due to collateral damage considerations. Raids exploit speed and surprise to achieve shock effect.

This emphasis on air mobility for early-entry forces makes overcoming enemy air defenses as important to the land Services as to the air and sea Services. Suppression or destruction of enemy air defenses merits particular attention to avoid placing tactical transport aircraft (fixed wing, VSTOL, and rotary) and the troops they carry at unacceptable risk. Without a joint solution to this problem, synergy between air and ground forces will remain elusive.

## C.1  Countering Air Defenses

Combinations of anti-radiation missiles, chaff, high-intensity flares, electronic countermeasures, and kinetic and non-kinetic attacks on known air defense command and communications centers already reduce opportunities for the enemy's air defenses to be successful. Synchronized employment of SOF, heliborne scouts, unmanned aerial vehicles (UAVs), unattended ground sensors, robotic vehicles, and air and space reconnaissance and surveillance assets can further narrow an enemy's engagement window if they are also networked with standoff or loitering fire delivery systems. Creating such networks could better enable U.S. and allied forces to destroy, deflect, or avoid the most prominent concentrations of the enemy's air defenses. Exposure to air defenses can be further reduced by exploiting terrain masking en route to a target or objective and varying ingress and egress routes.

Shoulder-fired air defense weapons are not ubiquitous and have exploitable weaknesses:

- ▶ Their operators cannot see well at night.
- ▶ They cannot see or shoot around buildings, trees, or other obstructions.
- ▶ Their operators must "lock on" and fire from exposed positions.

Firing blast-only suppressive munitions, high-power microwave, non-nuclear electro-magnetic pulse (EMP), or other non-lethals into areas en route to and near landing sites can avoid needless collateral damage while keeping unseen gunners from emerging from cover to fire. Mixed with precision high-explosive attacks, this could open a window of greater safety during an air mission's critical final approach and subsequent lift-off.

Landing ground troops immediately on the heels of aerial or remote fires and directly on or near objectives can minimize the enemy's reaction time and an assault force's exposure time while also putting obstacles between enemy gunners and assault aircraft. Noisy or spectacular diversionary attacks can deflect gunners' attention from attacks coming from other directions. Pre-dawn attacks are more likely to reduce the effectiveness of air defenses because humans manning static weapons and radar screens get sleepy, become less attentive, and are generally slower to react at night. Force protection should be substantially improved by combining the effects of multiple forms of attack, suppression, and diversion, a particularly rich area for joint experimentation.

## C.2   Operating from Enemy Territory

Because RDO 2010 envisions applying ground forces against high payoff targets with a precision similar to fires, forces participating in RDO 2010 operations will have to be highly mobile, well connected and informed, and sufficiently flexible to be tailored to the mission. Although targeted mainly against "softer" targets in an enemy's interior, early-entry ground forces can expect to encounter local security forces and armored reaction forces of varying size and capability. It is critical that they can engage enemy forces in the midst of civilian populations.

Important to the effectiveness and survival of light forces once they are on the ground is their possession of superior information and responsive firepower. Digitized communications gear can help keep small-unit commanders aware of changing conditions at an objective and link them to a joint force commander who controls external sources of heavier fire support. Javelin "fire-and-forget" antitank missiles, "rockets in a box," EFOG-M (enhanced fiber-optic guided missile), and increasingly capable mortars all can radically increase the firepower of a small force without imposing a need for man-power-consuming, static fire-support bases. To avoid overburdening the men who use them, all of these weapons can be transported on small, robotic all-terrain vehicles that can be deployed by helicopter or VSTOL. Because an early-entry ground component would have to stay mobile on enemy territory, it must be capable of operating from FARRPs in the same way today's air assault units do. Figure 6 on the next page illustrates the concept.

**Assault objectives by parachute, helicopter, or VSTOL**

• Protect aircraft with diversionary action, flares, jamming, blast munitions, night ops

• Time assault to promptly follow air and missile strikes

• Stay only as long as it takes to achieve intended effect — fast in, fast out

**Seize airfields for follow-on force**

• Protect aircraft with diversionary action, flares, jamming, blast munitions, night ops

**Operate from FARRPs**

• On terrain enemy would find hard to reach

• For resting, rearming, refueling

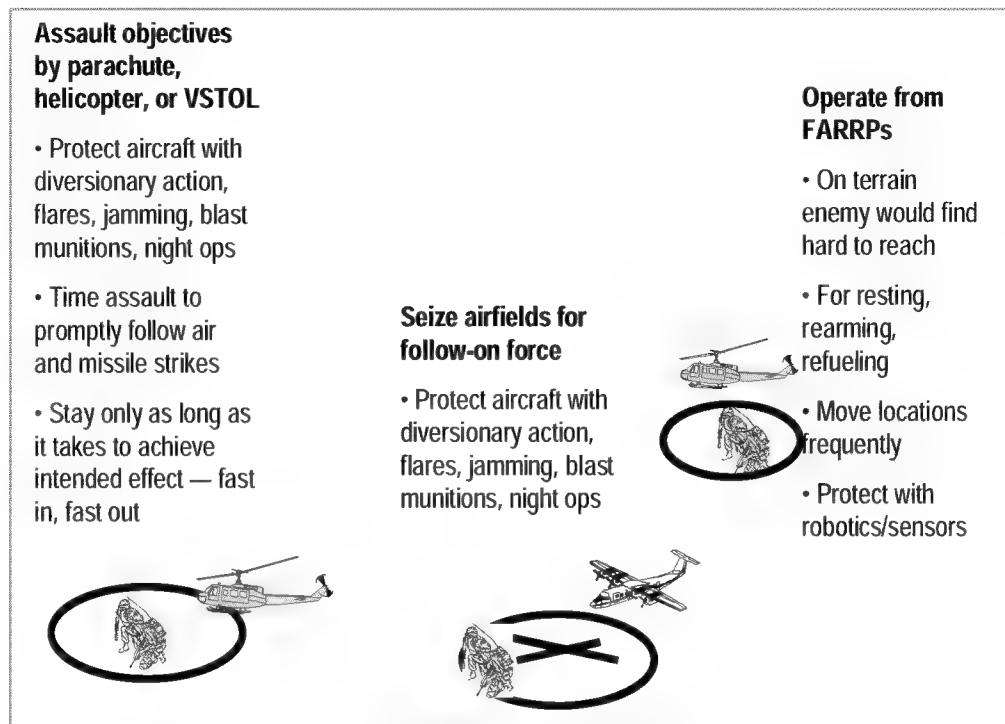• Move locations frequently

• Protect with robotics/sensors

Figure 6.  Light Force Assault

A FARRP is austere and mobile, able to move frequently by air to make it harder to target. When a raiding force completes its mission, it moves to a FARRP for food, fuel, and ammunition before going out on another raid. FARRPs enable units to be cycled

into combat operations in thirds—one engaged, one standing by at a FARRP, and another resting at a safer site in a remote area or at sea. When a supported unit departs, the emptied FARRP would be lifted out and flown to a new location. A small airportable aid station would be collocated with some FARRPs, providing a stabilization point for casualties that cannot be taken directly to a more distant hospital ship or land-based facility.

Because noise and long-distance visibility of aircraft reveal FARRP locations, they cannot risk operating from one place for very long. Remaining static for too long would risk drawing enemy counterattack or fires in the way fire-support bases did in Vietnam. Reconnaissance elements would have to constantly locate and secure new FARRP sites. And because the number of possible FARRP sites is limited and frequent revisiting of the same site could be risky, FARRPs could be the determining factor of how long an operation could continue without seizing and holding a secure forward base of operations through which heavier reinforcements can be delivered.

FARRPs would ideally be established on terrain that is difficult for the enemy to reach on the ground but relatively easy for the United States and its allies to reach by air. Examples that approach these conditions include Iraq's western desert and southern marshes, Iran's central desert and western mountains, North Korea's western coastal range and central mountain spine, and Libya's desert oases. All offer numerous isolated points at which a FARRP could operate for a limited period and move on by air to another location when re-supply is complete. By moving from place to place frequently, FARRPs are likely to provoke enemies to chase them. If this occurs, an enemy risks becoming exhausted and battered as he tries to traverse difficult terrain. This would also expose his ground movements to aerial attack. Surveillance UAVs and unattended ground sensors covering approaches to FARRPs would give them an added measure of security.

As soon as the tactical situation permits the use of airfields, heavier vehicles and their associated support can be brought in to clear and hold swaths of territory. This synergistic application of light and heavier ground forces, when combined with tactical air mobility and aerial and remote firepower, offers greater power and flexibility than any of those force elements can provide individually.

## C.3   Strategic Mobility

Over the longer term, that is to say, beyond 2010, new forms of force delivery should become possible. Fast sealift and large "tethered" airships that can deliver payloads exceeding that of today's C-5 could become possible. They could not, however, be expected to deploy forces directly into combat. Moving large numbers of troops and equipment to intermediate staging bases with such platforms in times of crisis would have an effect analogous to the use of sapper trenches during earlier wars to get attackers closer to the foe before making the final assault.

Joint base ships from which Army, Marine, and SOF aviation could operate could overcome the wear-and-tear involved in self-deploying helicopters and VSTOLs. Such ships can include maintenance shops, stocks of aviation spare parts, below-decks hanger space, and crew rest spaces. They could be pre-positioned near peacetime concentrations of helicopters to enable them to be quickly loaded and deployed. Manpower-intensive retired carriers could serve the purpose in the interim. To reduce the manning strain on the Navy, these carriers could be manned in part by Naval Reserve crews and in part by Army Reservists performing administrative and support functions now provided by the Navy alone. Because the carriers would not operate steam catapults or arresting gear, the size of the active and reserve complement could be less than a third

(roughly 500 Navy and 700 Army) of the 5,000 people who now man a carrier and its embarked air wing.

## C.4   Non-Kinetic Attack

While the quick one-two punch of kinetic fires and ground attacks can enhance the effectiveness of both, non-lethal forms of attack can further heighten effectiveness while reducing risks. Examples include:

▶ Jamming or severing a targeted enemy's communications could prevent him from reporting what is happening or calling for help.

▶ Spoofing his communications could cause him to react in ways that make him more vulnerable.

▶ Incorporating noisy deception operations or diversionary attacks could confuse an enemy and cause him to divert or dissipate his forces while reducing the risks to our own.

▶ Applying directed energy weapons, such as lasers, EMP generators, and high-power microwave generators, could minimize collateral damage or secondary toxic hazards to friendly forces.

Using all of those capabilities together and concentrating their application temporally and spatially to complement conventional forms of attack could quickly disrupt an enemy's ability to do more harm. Because hostages, prisoners of war (POWs), refugees, and innocent civilians are being exploited with regularity and increasing success around the world, developing capabilities that will temporarily incapacitate but not kill is becoming more important. A future hostage or POW rescue might unfold as follows:

▶ Exploiting early morning darkness, a flight of stealthy low-flying UAVs discharges a non-nuclear electromagnetic pulse at selected points along the intended flight path of a rescue mission to destroy the enemy's communications circuitry and the circuitry of air defense weapons.

▶ Minutes later, a second flight of stealthy UAVs, entering the objective area on a flight path masked by terrain from EMP bursts, discharges high frequency noise and flash weapons against the incarceration site to stun or immobilize prisoners, guards, and nearby innocents alike.

▶ A third flight of UAVs carry a mix of smoke, concussion, high explosive fragmentation, and armor-penetrating ordnance, giving mission commanders a flexible array of lethal and non-lethal fires to keep an opposing reaction force away from the rescue site.

▶ All UAVs on the mission are controlled from consoles in the mission commander's helicopter. A deputy mission commander's aircraft has similar consoles to allow distributed operations and hedge against single point failure.

## C.5 Tactical Mobility and Robotics

A similar approach could be used to attack a WMD facility without venting toxic materials into the atmosphere, capture prisoners, or "take down" an enemy command and control facility. Such missions require speed to leave an enemy little time to adapt or react. An airmobile force is well suited for such a mission. Freed from "the tyranny of terrain," the force would move faster than an enemy could, would be flexible in size and composition, and would be accompanied by a mix of sensor platforms and weapons platforms tailored to the mission. Now let's pick up the mission in progress, describing notional characteristics of the assault force.

▶ Before the stun munitions' effects begin to wear off, a rescue team lands at the site in helicopters. The helicopters' skins and blades are made of an ultra-light armor coated with radar-absorbing paint to minimize their radar cross-section. Throughout the aircraft, light fire-resistant composites and ceramics replace metal wherever possible to reduce weight and increase ballistic protection. The aircraft use a mix of renewable energy and fossil fuel to power their components, thus trimming logistical demands.

▶ Helicopters that deliver the rescue force refuel at a pre-selected site protected by a combination of robotic sentries, a human reaction force, and UAVs. Self-sealing lightweight drop tanks give the helicopters sufficient range to reach the rescue site from remote staging sites at sea and enable them to return to sea bases via a FARRP.

▶ Task-specific teams enter the facility, bind the immobilized guards, destroy their weapons, take selected people prisoner, free the captives, and take them to waiting aircraft. The mission, rehearsed previously in simulations and team drills, is over in minutes. The aircraft depart on a different route, again using terrain to mask their flight. In their wake, aerial robots dispense protective stun munitions to keep enemies down long enough for the assault force to make its escape.

While the mission described may sound somewhat futuristic, the capabilities described are within technological reach today. There should be little need by the teams to employ lethal force, but they should be prepared to do so when necessary. Most of the firepower is carried aboard unmanned aircraft controlled by human operators through se-

cure, reliable burst transmission signals. Other UAVs accompanying the mission could carry combinations of sensors, or may serve as buses for dispensing swarms of micro-UAVs and unattended ground sensors, which would provide a more intrusive coverage of a particular area or facility.

Maximizing the use of UAVs to carry ordnance and sensors minimizes the manpower required, reduces the risk to humans, extends a small force's radius of influence, and gives its commander a flexible array of instantly responsive combat power. The mix and number of manned and unmanned aircraft and the seniority of the mission commander may vary widely, depending on the mission's complexity and scope. Variants of such a force might be used to perform damage assessment, disable a mass casualty weapons facility, capture evidence or information sources, capture prisoners, perform reconnaissance, or find and destroy all or critical parts of a high-value underground facility.

Because time-on-station will be limited by fuel, mission rehearsal to achieve precision execution and teamwork will be increasingly important, requiring light ground forces to become more SOF-like. By operating from a combination of mobile bases at sea and FARRPs established at remote sites en route to a mission area, heliborne forces accompanied by UAVs can become a precision complement to air-delivered and sea-delivered standoff munitions and remote fires.

Aerial and ground robotic vehicles can be integrated into manned organizations to perform mine clearance, reconnaissance, transport, security, and perhaps even direct and indirect fire roles. Investments in such capabilities could extend the versatility, range of influence, and security of existing light forces at a fraction of the cost of heavier forces. Through their reconnaissance function alone, such devices offer the prospect of company-size units bringing more precision firepower to bear than today's battalions and perhaps brigades can.

None of the above suggests air mobility may become risk free. U.S. forces in Vietnam suffered large numbers of helicopter losses, as did the Soviets in Afghanistan. Likewise, the French and U.S. air forces suffered unacceptable losses of cargo planes trying to evacuate casualties and deliver replacements and supplies to isolated firebases like Dien Bien Phu and Khe Sanh. Today, air defense weapons have become more capable, and there is little doubt that they will continue to improve. This should not deter the use of air mobility as a means of generating greater synergy between air and ground forces. Making this a priority and subjecting fresh ideas to intensive experimentation can make the difference between high-risk dependence on slow-moving tactical maneuver and the exploitation of aerial speed to deprive an enemy of the time to adapt.

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# Acronyms and Abbreviations

| | |
|---|---|
| CAOC | Combined Air Operations Center |
| CINC | commander in chief |
| DCINC | Deputy command in chief |
| DJTFAC | designated joint task force augmentation cell |
| DoD | Department of Defense |
| EFOG-M | enhanced fiber-optic guided missile |
| EMP | electro-magnetic pulse |
| FARRP | forward area rearm/refuel point |
| IDA | Institute for Defense Analyses |
| ISR | intelligence, surveillance, and reconnaissance |
| JAWP | Joint Advanced Warfighting Program |
| JTF | joint task force |
| NATO | North Atlantic Treaty Organization |
| POW | prisoner of war |
| Ret. | retired |
| RDO | rapid decisive operations |
| SEAL | Sea-Air-Land Special Operations units (Navy) |
| SOF | Special Operations Forces |
| UAV | unmanned aerial vehicle |
| US/U.S. | United States |
| USA | United States Army |
| VSTOL | vertical short take-off and landing |
| WMD | weapons of mass destruction |

# Notes

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This paper is about responding effectively to future contingencies before facts on the ground get harder and costlier to change. Its focus is on quickly seizing the initiative and maintaining an operational tempo that exceeds the enemy's ability to adapt. To stimulate the capability to seize the initiative, Rapid Decisive Operations (RDO) 2015 explores the synergistic application of air, land, sea, and space capabilities, generating greater impact from a concerted effort than any single force element could achieve on its own. Fostering and enabling synergy's exploitation requires special attention to a "joint glue" comprising (1) joint command and control; (2) intelligence, surveillance, and reconnaissance (ISR) integration; and (3) joint force application. To demonstrate RDO 2015's potential, the paper revisits the Gulf War, Kosovo, Panama, and Somalia contingencies, and explores what might have been possible if RDO 2015's "joint glue" had been in place at the time. Central to success in the revisited cases are four common enablers: (1) focus early on breaking enemy cohesion, (2) employ standing joint task force (JTF) headquarters, (3) integrate ISR efforts, and (4) exploit air-ground synergy.

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